

ARP



2600 Patch Book

The ARP 2600 Patch Book

TABLE OF CONTENTS

Basic Instruments

1. Marimba Roll
2. Trumpet & French Horn
3. Trucker Bass
4. Octabass
5. Wonder Clavinet
6. String Sweetener
7. Tubular Chimes
8. Violin
9. English Horn/Oboe
10. Fanfare Trumpet
11. Monster Organ
12. Thereminovox
13. Cello Section
14. Cowboy Harmonica
15. Classic ARP 2600 Patch
16. Electric Mouth-harp
17. Licorice Schtück
18. Big Bass Drum
19. Trombone/Tuba
20. Flute
21. Okie Guitar
22. Jazz Guitar

Advanced Instruments

23. Ceremonial Gong
24. Heavy Metal Fuzz Lead
25. 65¢ Piano
26. Doc Trumpet
27. Stereo Bass & Delayed Violin
28. Oriental String Duo
29. Pianoforte
30. Big Band Brass
31. Electronic Piano
32. Zombie Organ
33. Glitter Guitar
34. Marimba: Chords and Lead
35. Handbells
36. Pennywhistle & Trumpet
37. Violin with Delayed Vibrato

Rhythms

38. Swing Traps: Hi-hat & Bass Drum
39. Metallic Thunks
40. Triple Timings
41. Tom & Hi-hat Duet
42. Steel Drum Corps
43. Advanced Steel Drum Corps
44. Random ARP Drum Solo
45. Back-beat: Bass Drum, Hi-hat & Tom
46. Cookin' Conga
47. Conga & Snare Drum Duet

Natural Sounds

48. Frog Bog
49. Jonathan Synthesized Seagull
50. Primeval Forest
51. Arboretum
52. Soprano
53. Sporadic Heavy Breathing
54. Cricket Colony
55. Clapping Thunder
56. Small Barking Mutt
57. Random Whistler
58. Mother Whistler
59. ARP Jungle
60. Water Drops
61. Stereo Chickadee Conversation
62. "Oh Yeah!"

Arpeggios, Chords & Sequences

63. Inverted ADSR Harmonic Arpeggio
64. Three-note Tunable Sequence
65. Three-note Chord from Two VCOs
66. Inharmonic Sequencing
67. Random Select: Four-note Tunable Arpeggio
68. Gliding Intervals

Sound Effects

69. Firetruck Siren with Horn Blast
70. 727 Starting Up, Taxiing, & Taking Off
71. Panning Freight Train
72. Edgar Winter's "Frankenstein"
73. Boing!
74. Wampus Monster
75. Assorted Splats & Sproings
76. Prancing Raindrops
77. "Pwee" or Synthesized High-pass Filter
78. Explosion

Advanced Applications

79. Ultraglide with Release Memory
80. Trio: Three Separate Envelopes & Timbres
81. Lagged S/H to Filter
82. "Owwa" or Inverted ADSR to VCF
83. Basic Vibrato from Internal Oscillator
84. Lagged Keyboard Voltage
85. ADSR Pan
86. Auto-pan on S/H
87. Auto-pan with Reverb
88. Keyboard-controlled Pan
89. Release-follow
90. Touch-repeat
91. S/H Echo
92. Echaperplex
93. Random Filter Sample: Keyboard Triggered
94. Voltage-controlled Resonance
95. Voltage-controlled On-time
96. Ethereal Phase-shifting on External Source
97. Modulated External Source
98. "Ow" on External Source
99. Drum-controlled ADSR & S/H
100. Split Keyboard: Bass "Ow" & Violin

Welcome

Welcome to the ARP 2600 Patch Book. These instrumental timbres, sound effects, natural sounds and rhythms are the result of over three years of experimentation by many people, both amateur and professional, who are deeply involved with electronic music synthesis. A large number of these patches have already been used in commercial recording; you might already have heard them on the radio, TV, movie soundtracks and record albums. We'd like to share them with you.

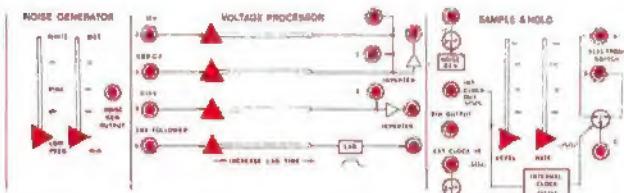
You'll progress more rapidly and derive more satisfaction from this book if you take these thoughts into account:

- * A patch chart is only a *guide*, not a precise configuration of sliders. Be flexible - the patch charts are.
- * Every individual synthesizer has its own slight idiosyncrasies. Slider positions on your 2600 might vary slightly from the norm set by the patch charts, so if you don't get exactly the sound you want, make minor corrections in control settings. Follow your ear.
- * And every set of eardrums also has its idiosyncrasies. If you like your flutes mellower, your monsters creepier, or your drums kickier, experiment a little.
- * To get full enjoyment from synthesizing these sounds, blow them through a good speaker system. The speakers on the front of the 2600 are there for reference; you should be playing through an amp and speaker system with a full-range response.
- * We don't have to tell you that it's fun to experiment with your own ideas; that's expected of electronic musicians. Many of these patches can be set up simultaneously: try the String Sweetener with the Auto-pen, for example. You will undoubtedly come up with some great patches of your own and will want to write them down. Blank 2600 Patch Pads are available from the factory at \$1.00 each.

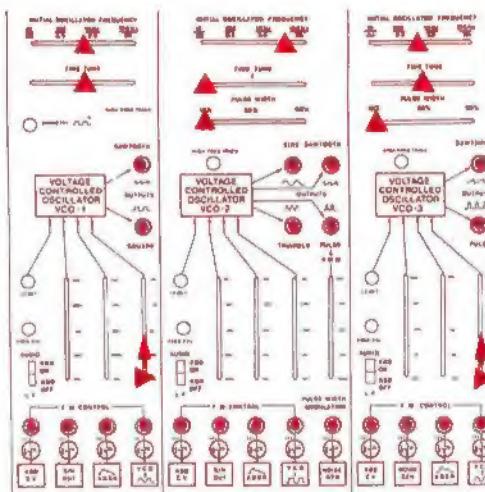
ARP would like to thank these people for getting it together in this 2600 Patch Book: Dave Fredericks, Roger Dumas, David Friend, Bruce McLendon, Phil Dodds, Alan R. Pearman, Tom Piggott, Mike Brigida, Rick Parent, Bernie Klocko, Dan Hakala, John Shykun, Bill Wentz, Edgar Winter, Margaret Shepherd, and a couple of anonymous folks who sent in some dynamite patches.

Heed These Hints:

1. Be certain that all sliders and switches not indicated on the patches are in the *left* or *down* positions.



2. Arrows indicate the positions to which sliders should be moved after tuning or during performance.



3. Shut the speakers off while you're setting the patch up. It's easy to get distracted by unripe sounds.



- Pay special attention to the information located in the corners on most of the patches. There you will discover how many patchcords and dummy plugs are needed, how the portamento and tuning knobs are to be used, and where to play on the keyboard.
- Set aside the number of patchcords you'll need for the patch before you plug anything in. Otherwise, the patch may be missing a patchcord and you won't notice it right away.
- Phrasing* is most important on the instrumental patches. If you can play the keyboard with the idea that you are pausing to take breaths on a flute or trumpet, or bowing back and forth on a violin, you'll have more success synthesizing those instruments.
- VCO Pitch Tuning: The keyboard diagrams over each patch indicate the pitch tunings for the VCOs and occasionally the VCF. For instance, this diagram means "Play Key C3 & tune VCO 3 to middle C." (Of course, if you don't have a tuning source such as a piano or a pitchpipe, you can tune the oscillators approximately.)

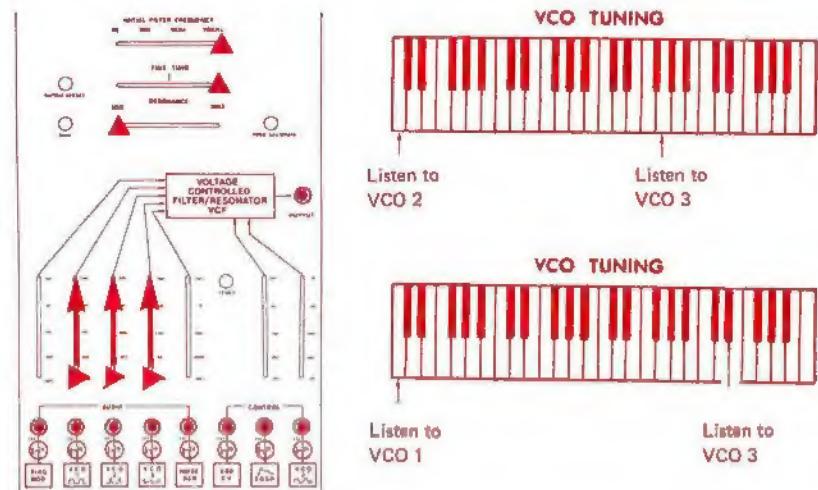


- Several patches will ask you to precisely tune two or three oscillators to unison or octave intervals. Tune one oscillator to the frequency range indicated on the patch chart and compare the other oscillators to it individually. When two oscillators are close to a harmonic interval, (in this case, a unison, octave, fifth or a fourth), you will hear 'beats.' Beats sound like a combination of tremolo and phaseshifting: the frequencies of the two oscillators are so close that they tend to cancel each other out periodically. This can more easily be heard if you run the oscillators through the Ring Mod.

Play a note and fine-tune the oscillator you are comparing to the basic pitch until the beats slow down to less than one every three seconds. This is easiest at unison, harder at an octave, and requires practice for perfect fourths and fifths. The best way to check for a precise tuning is to play higher notes than the one used for tuning. The beats will be faster at higher frequencies.

Interval Tuning Example: Patch No. 35, Marimba Chords & Lead

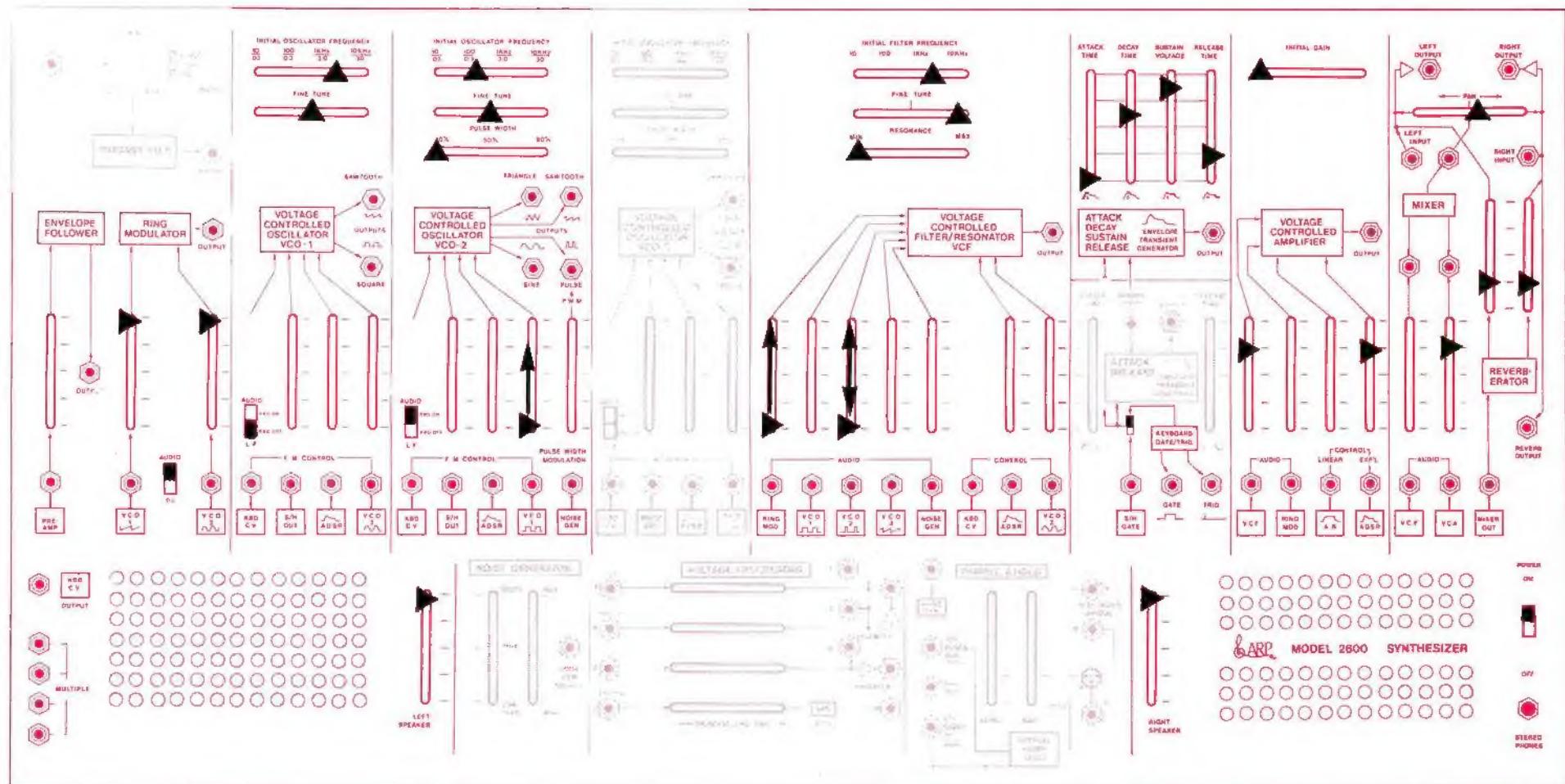
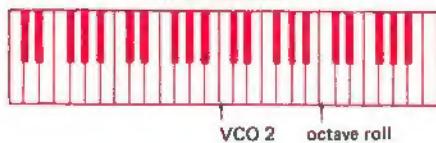
- Raise VCO 3 $\sim\sim$ into VCF. Play Key C1 and tune VCO 3 to a low, recognizable pitch.
- Play Key G3, still listening to VCO 3. This is the pitch to which you will tune VCO 2.
- Close VCO 3 $\sim\sim$ at the VCF and raise VCO 2 $\sim\sim$. Play C1 and tune VCO 2 to the pitch you heard at step 2.
- To check for proper tuning, go back and forth: Play G3--listen to VCO 3. Play C1--listen to VCO 2.
- Try this procedure in tuning VCO 1 at three octaves and a minor third above VCO 3 (Key Eflat4).
- Raise all three VCOs into VCF and play the bottom octave.



Don't be discouraged if the sound you want doesn't automatically appear like a candy bar out of a vending machine. Chances are good that you've forgotten to switch on the S/H Gate, the Oscillator Frequency Switches, or the power. Another possibility might be that one of the patchcords isn't plugged in fully. With practice, you'll be able to troubleshoot any problem encountered with any patch. They all work when set up properly.

Basic Instruments

VCO TUNING

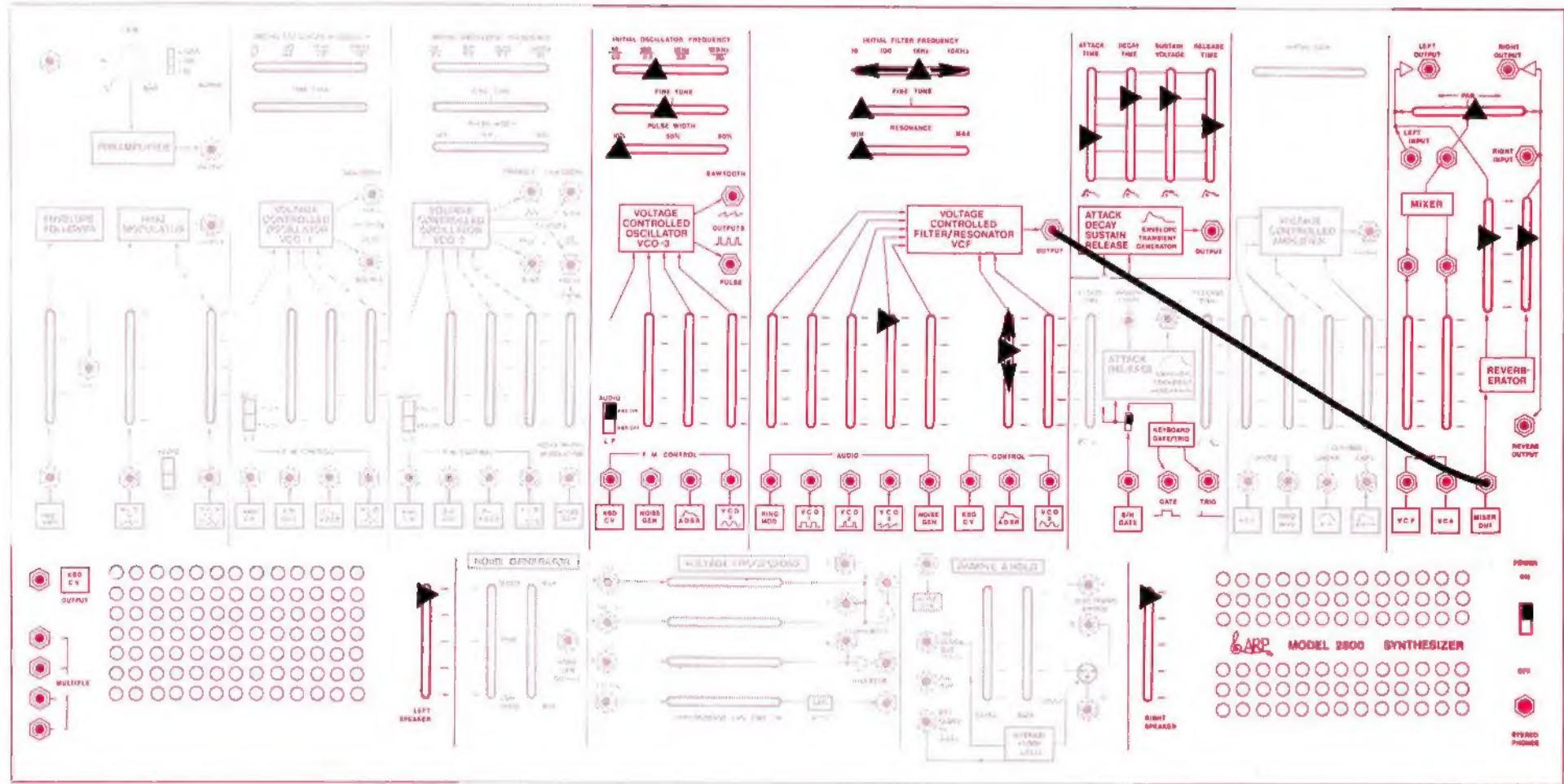
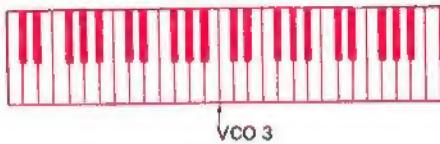


1. Raise VCO 2 ↑ into VCF and tune to middle C.
2. Close VCO 2 at VCF ↑ and raise Ring Mod slider ↑ into VCF.
3. Adjust VCO 1 frequency → for speed of roll.
4. Raise VCO 1 ↘ into VCO 2. Tune for octave roll.

Marimba Roll

1.

VCO TUNING



1. Open VCF → and tune VCO 3 to middle C.
2. Close VCF ← and adjust ADSR slider ↓ into VCF for trumpet or French horn.

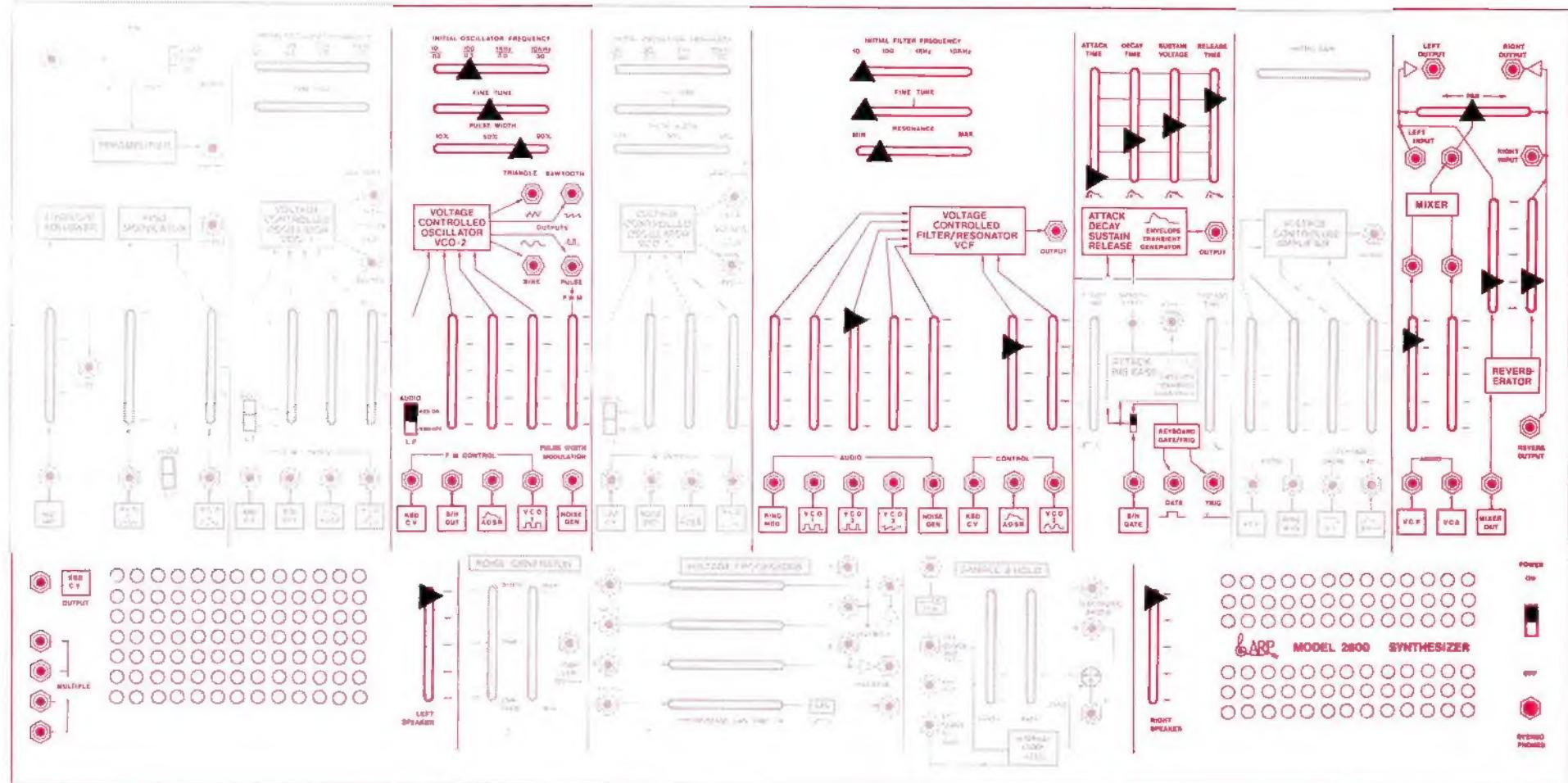
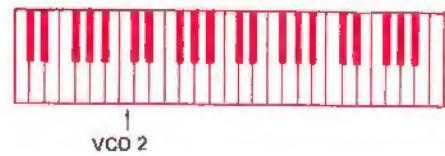
1 PATCHCORD

Trumpet & French Horn

2.

KEYBOARD RANGE: BOTTOM 2 OCTAVES

VCO TUNING

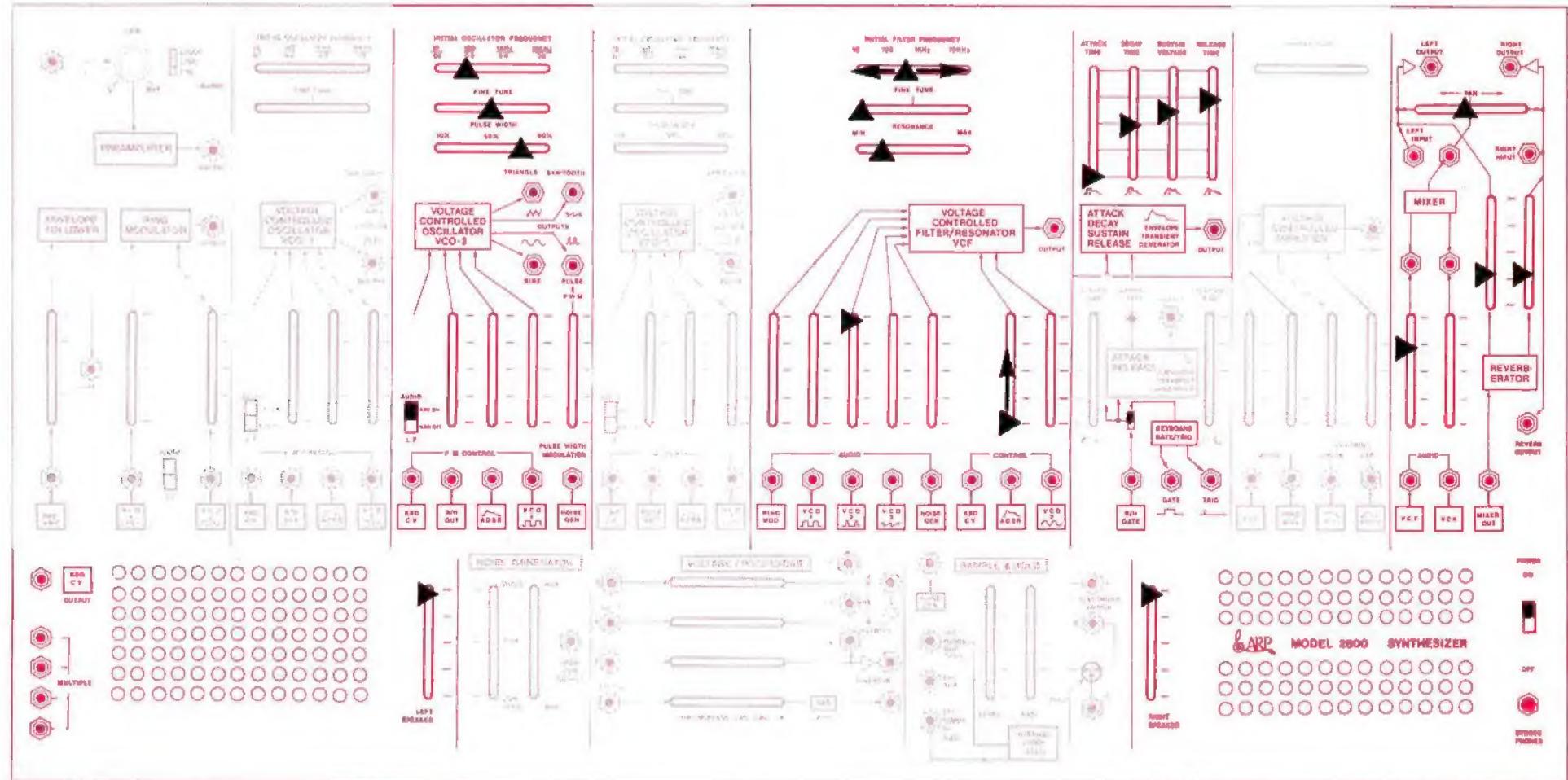
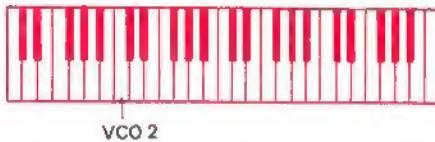


Trucker Bass

3.

KEYBOARD RANGE: BOTTOM 2 OCTAVES

VCO TUNING

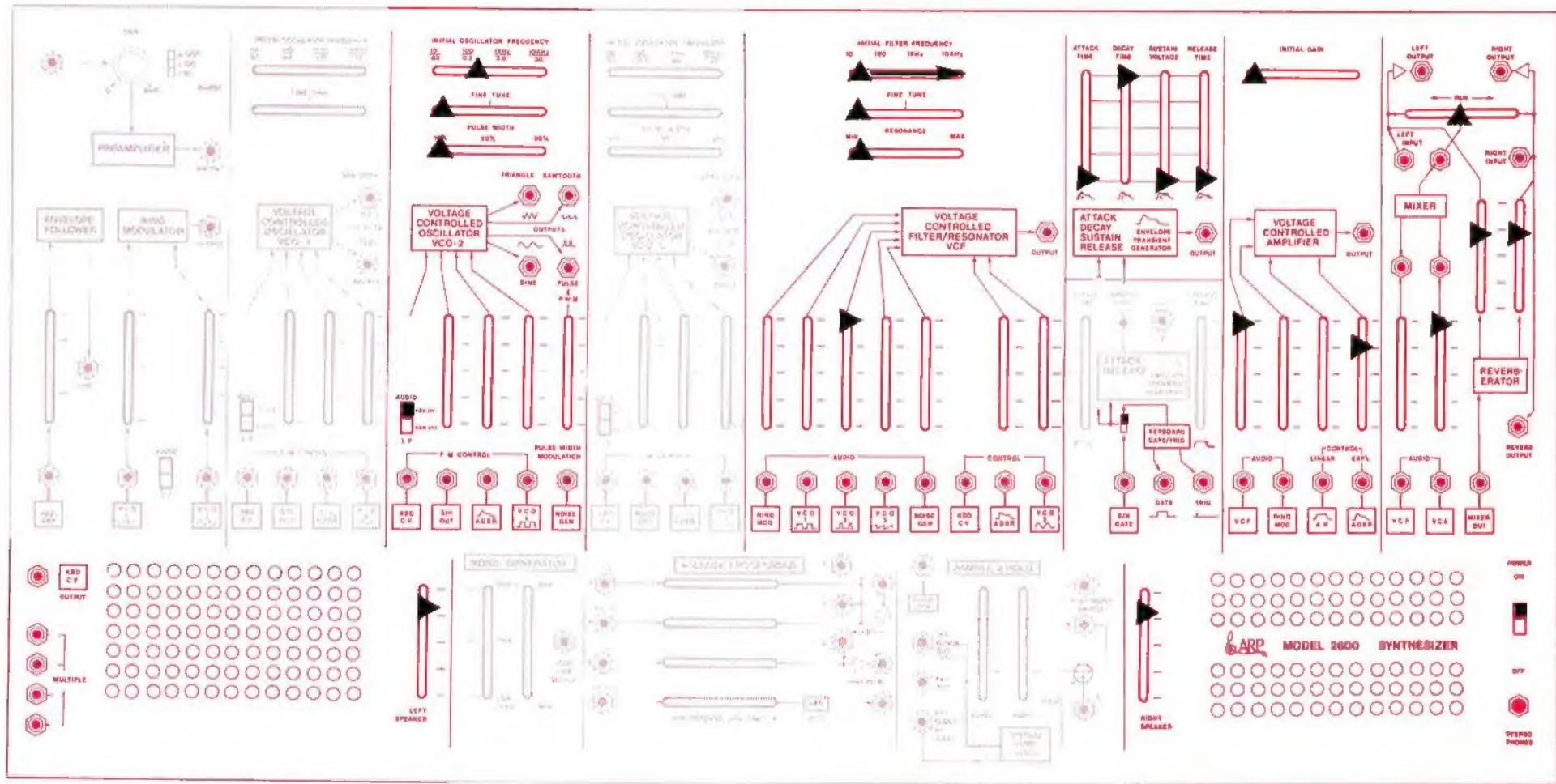
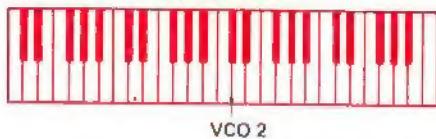


1. Open VCF → and tune VCO 2 to 1 octave below middle C.
2. Close VCF ← and raise ADSR ↑ into VCF for brightness.

Octabass

4.

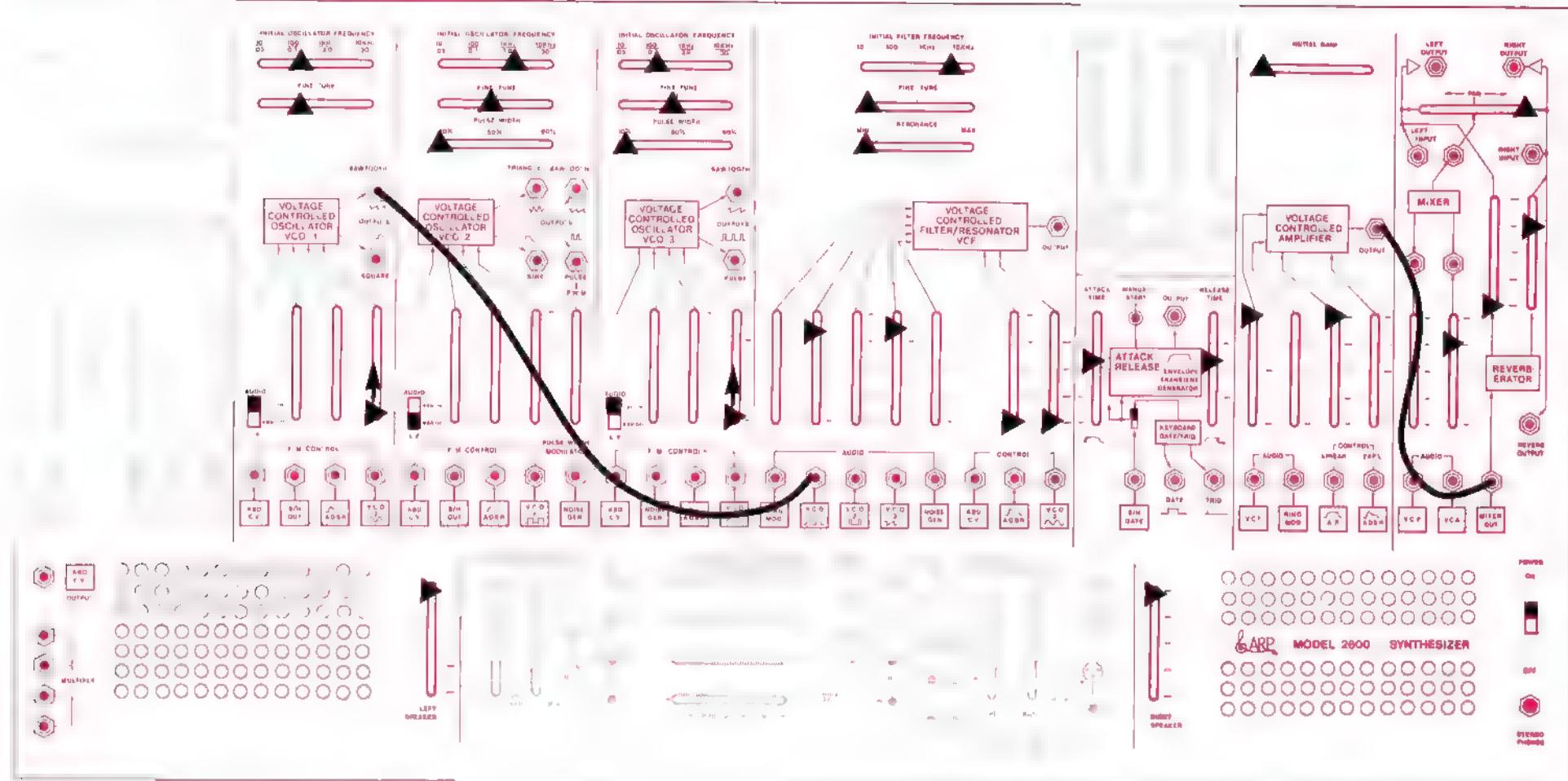
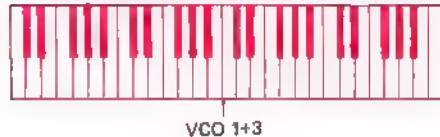
VCO TUNING



Wonder Clavinet

5.

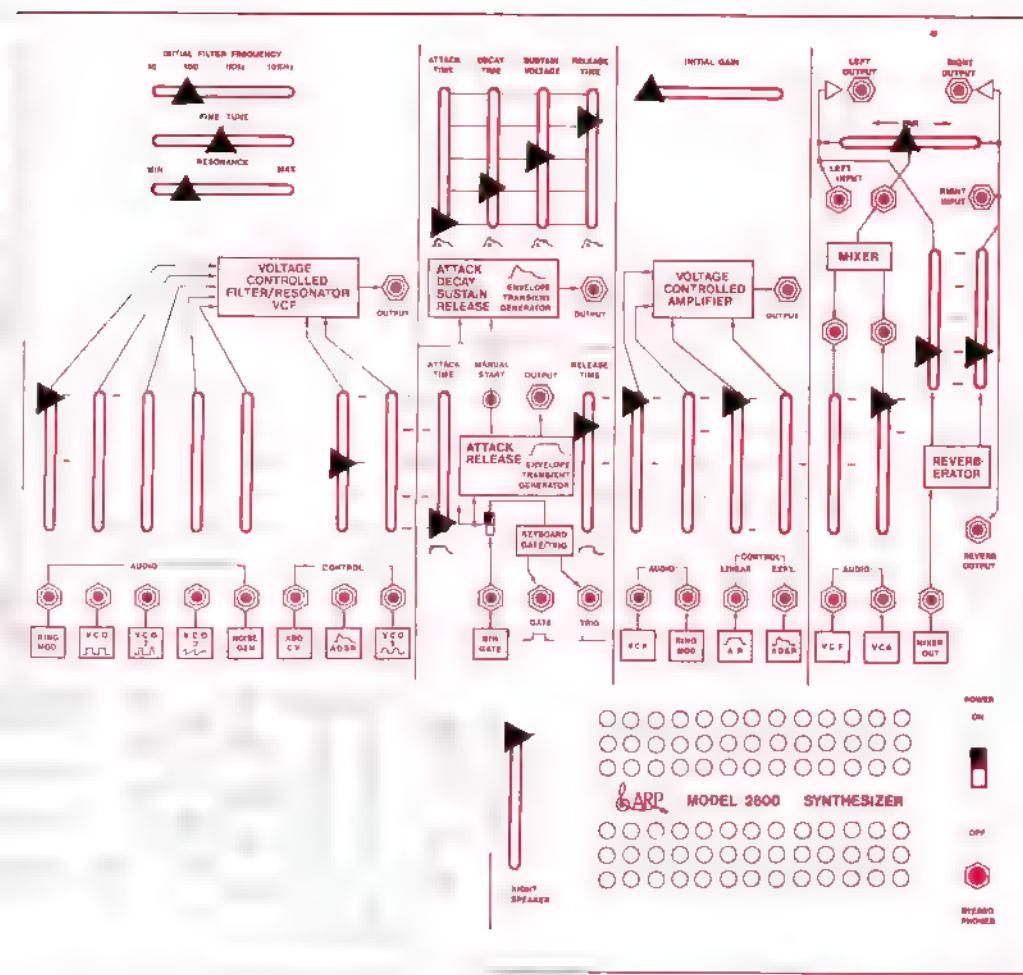
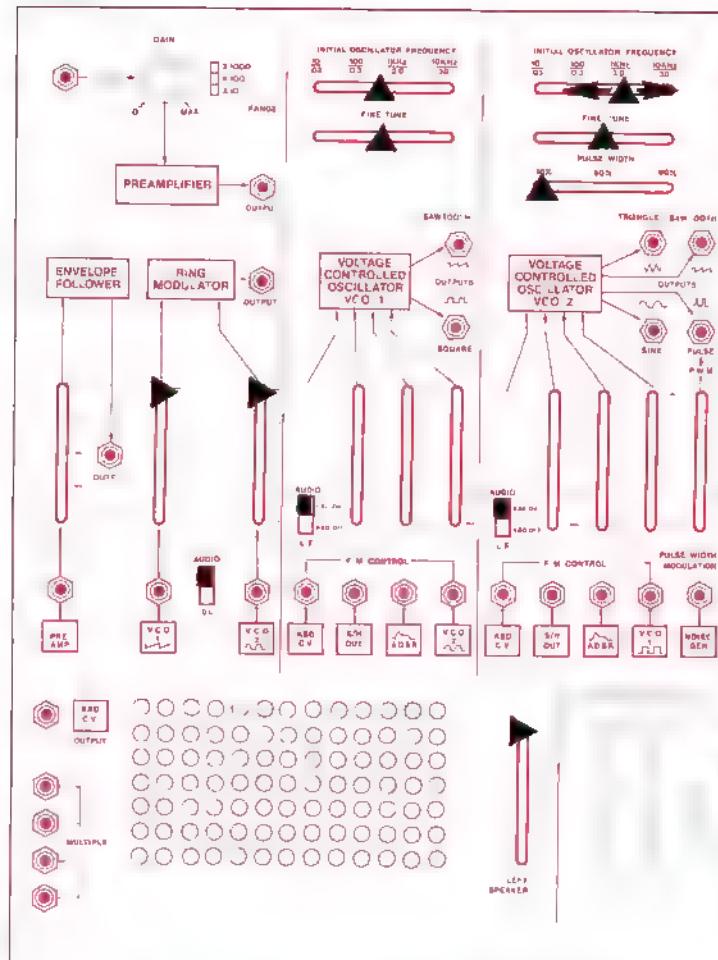
VCO TUNING



1. Tune VCO 3 to middle C.
2. Tune VCO 1 several beats off VCO 3.
3. Raise VCO 2 1 into VCO 1+3 for vibrato.
4. Adjust VCO 2 frequency for vibrato speed.

String Sweetener

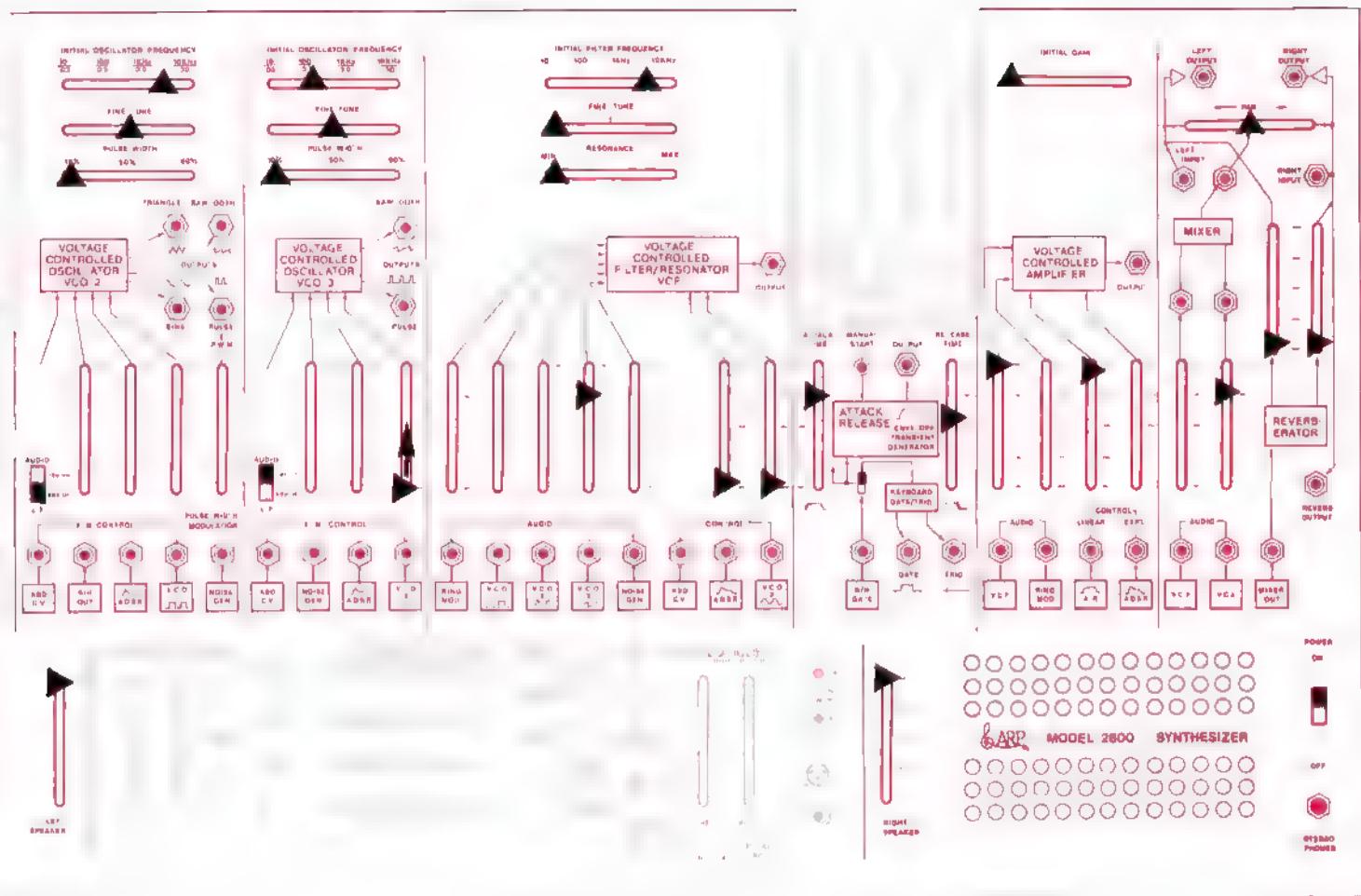
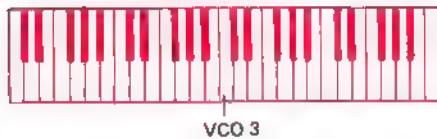
6.



Adjust VCO 2 frequency for different bell effects.

Tubular Chimes

VCO TUNING



Portamento

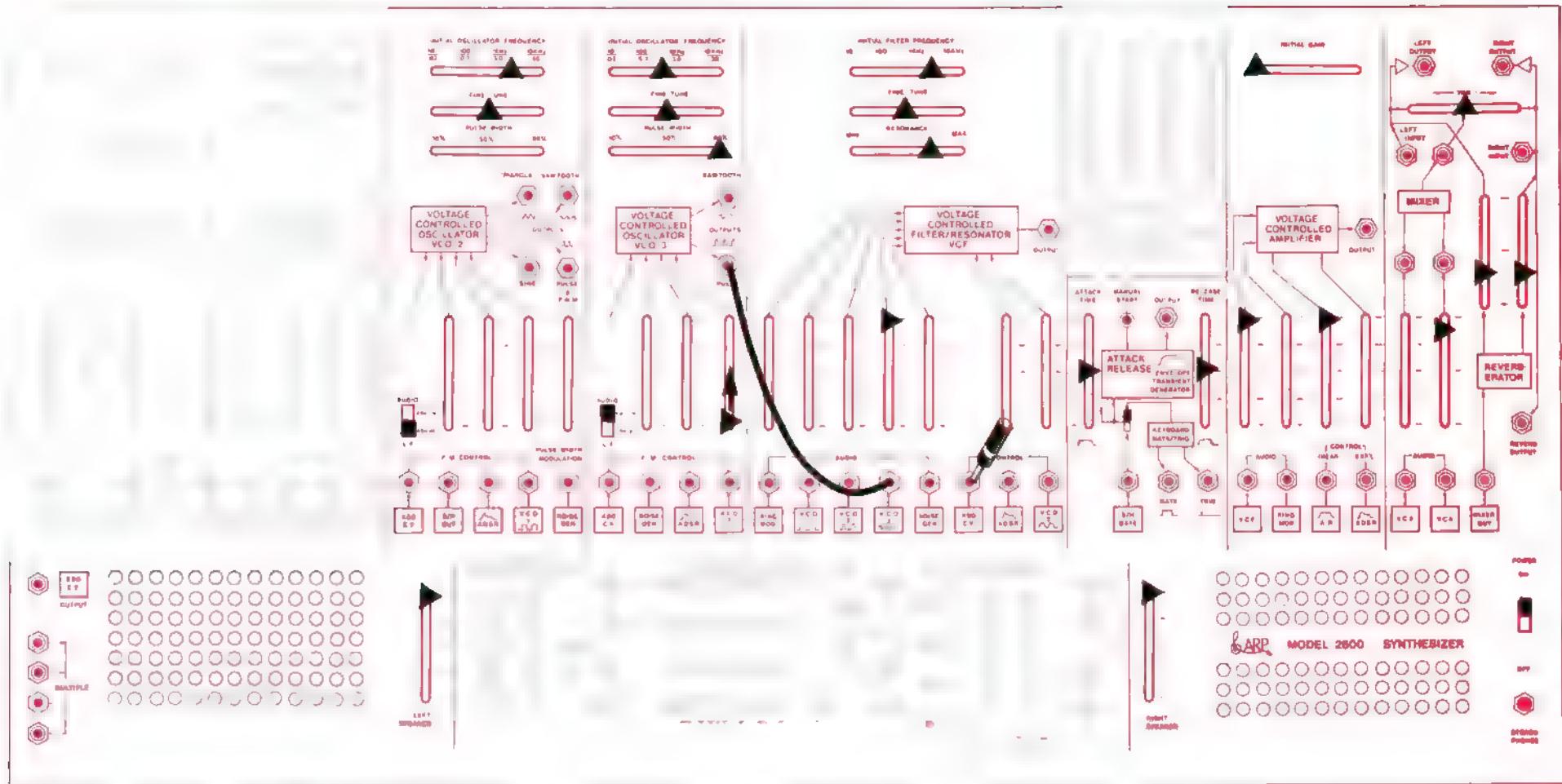
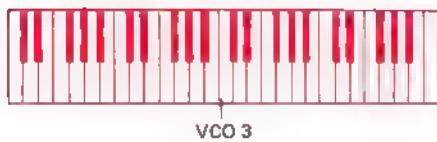


1. Tune VCO 3 to middle C.
2. Raise VCO 2 into VCO 3 for vibrato
3. Adjust VCO 2 frequency for vibrato speed.

Violin

8.

VCO TUNING



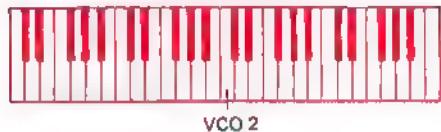
1. Tune VCO 3 to middle C.
2. Raise VCO 2 $\uparrow \sim$ into VCO 3 for vibrato.
3. Adjust VCO 2 frequency for vibrato speed

1 PATCHCORD
1 DUMMY PLUG

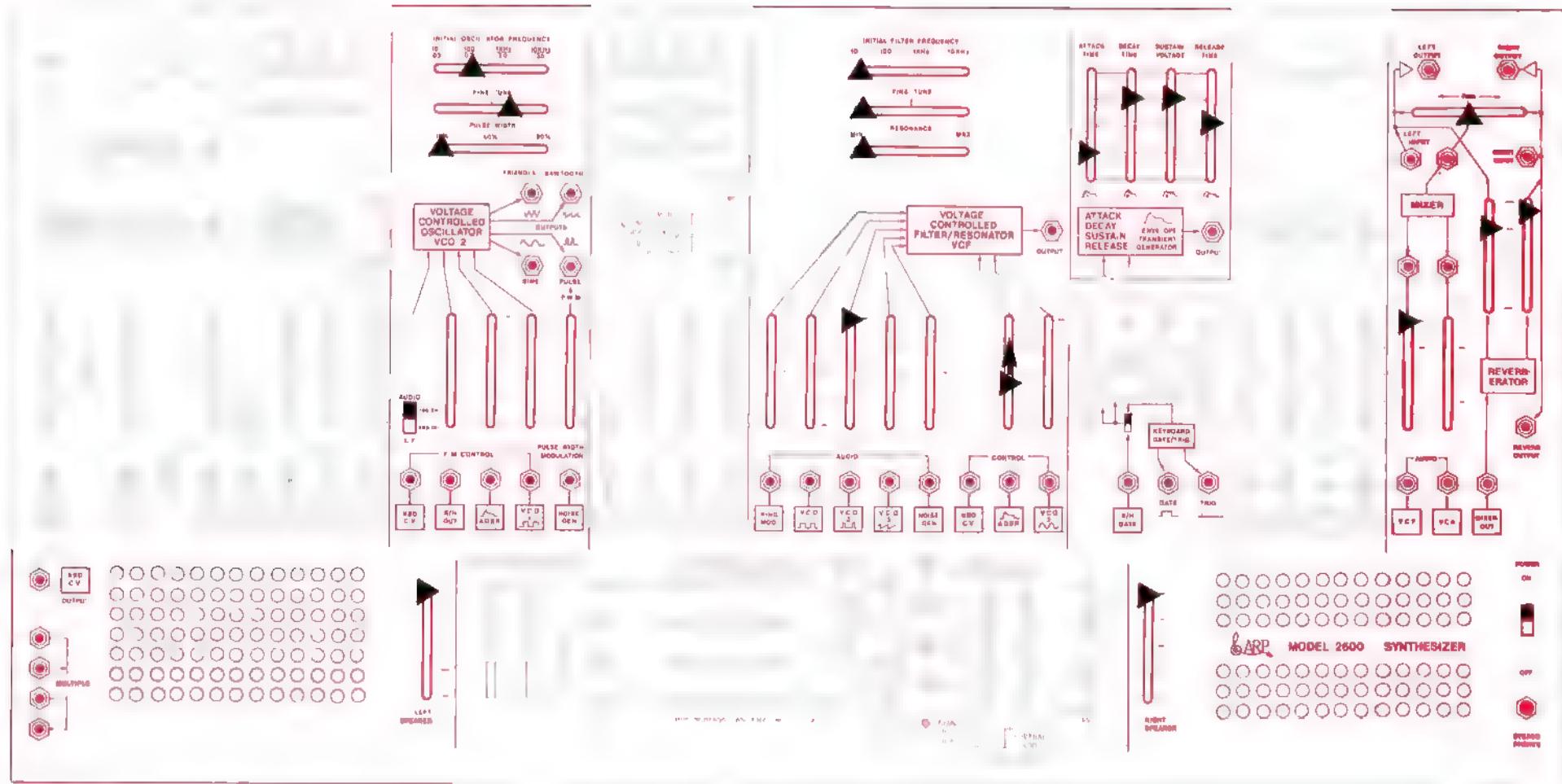
English Horn/Oboe

9.

VCO TUNING



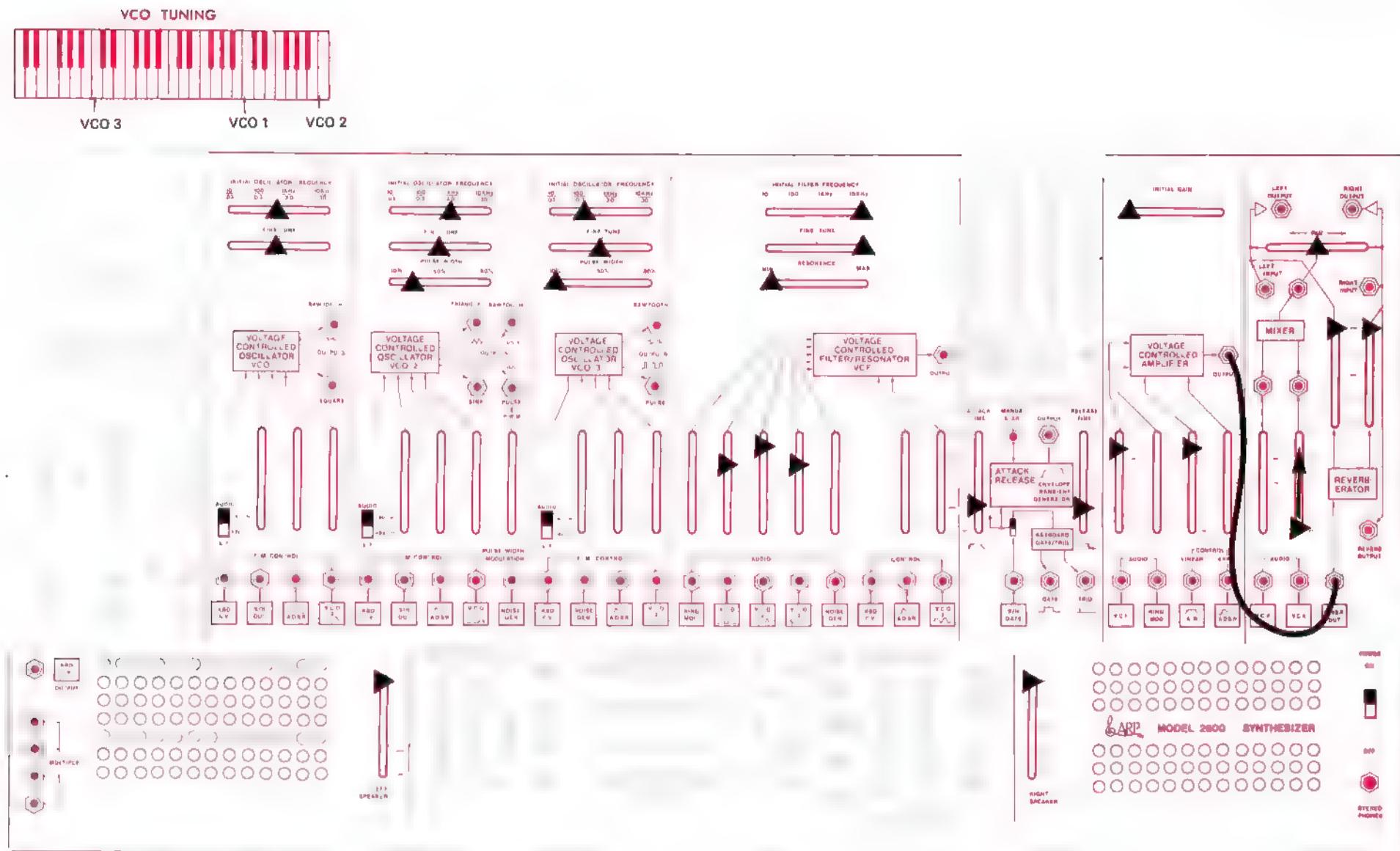
VCO 2



1. Tune VCO 2 to middle C.
2. Raise ADSR ↑ into VCF Control for brightness.

Fanfare Trumpet

10.



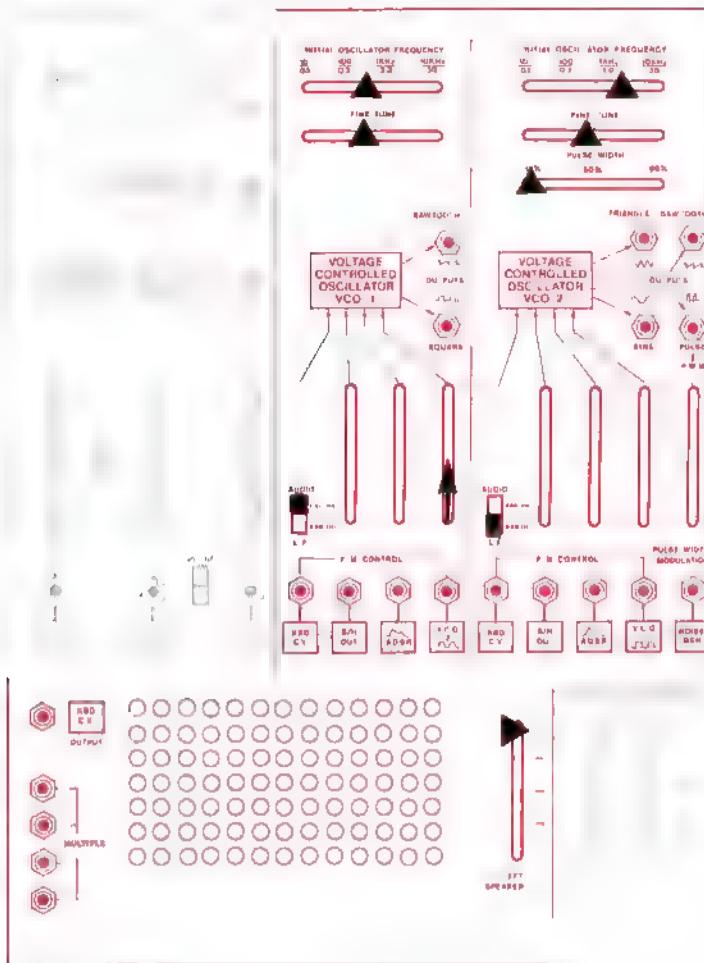
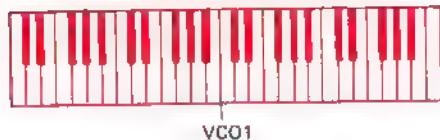
1. Tune: VCO 1 to one octave above middle C.
VCO 2 to two octaves above middle C.
VCO 3 to one octave below middle C.
2. Raise VCA [] into Mixer for brilliance.

1 PATCHCORD

Monster Organ

11.

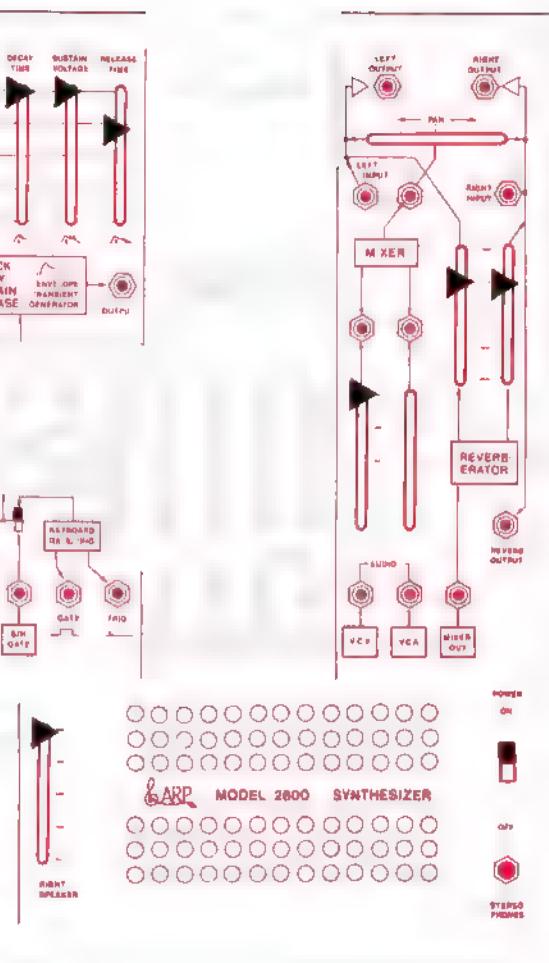
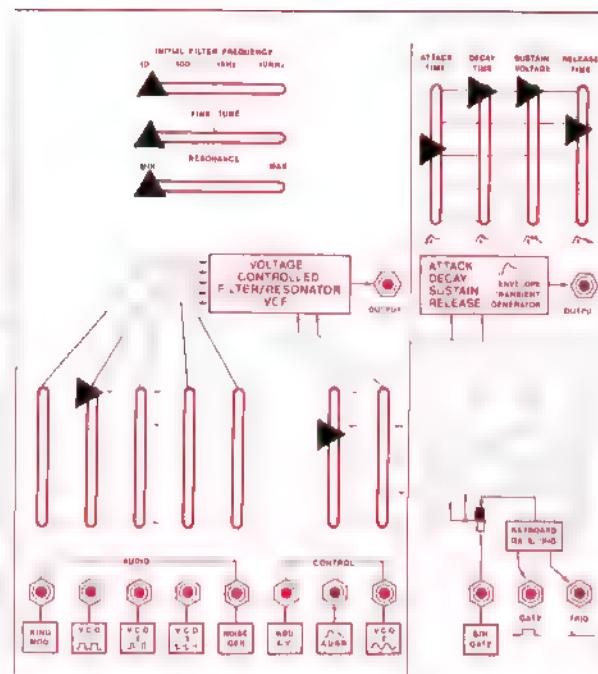
VCO TUNING



Portamento



1. Tune VCO 1 to middle C.
2. Raise VCO 2 into VCO 1 and adjust VCO 2 frequency for vibrato speed.



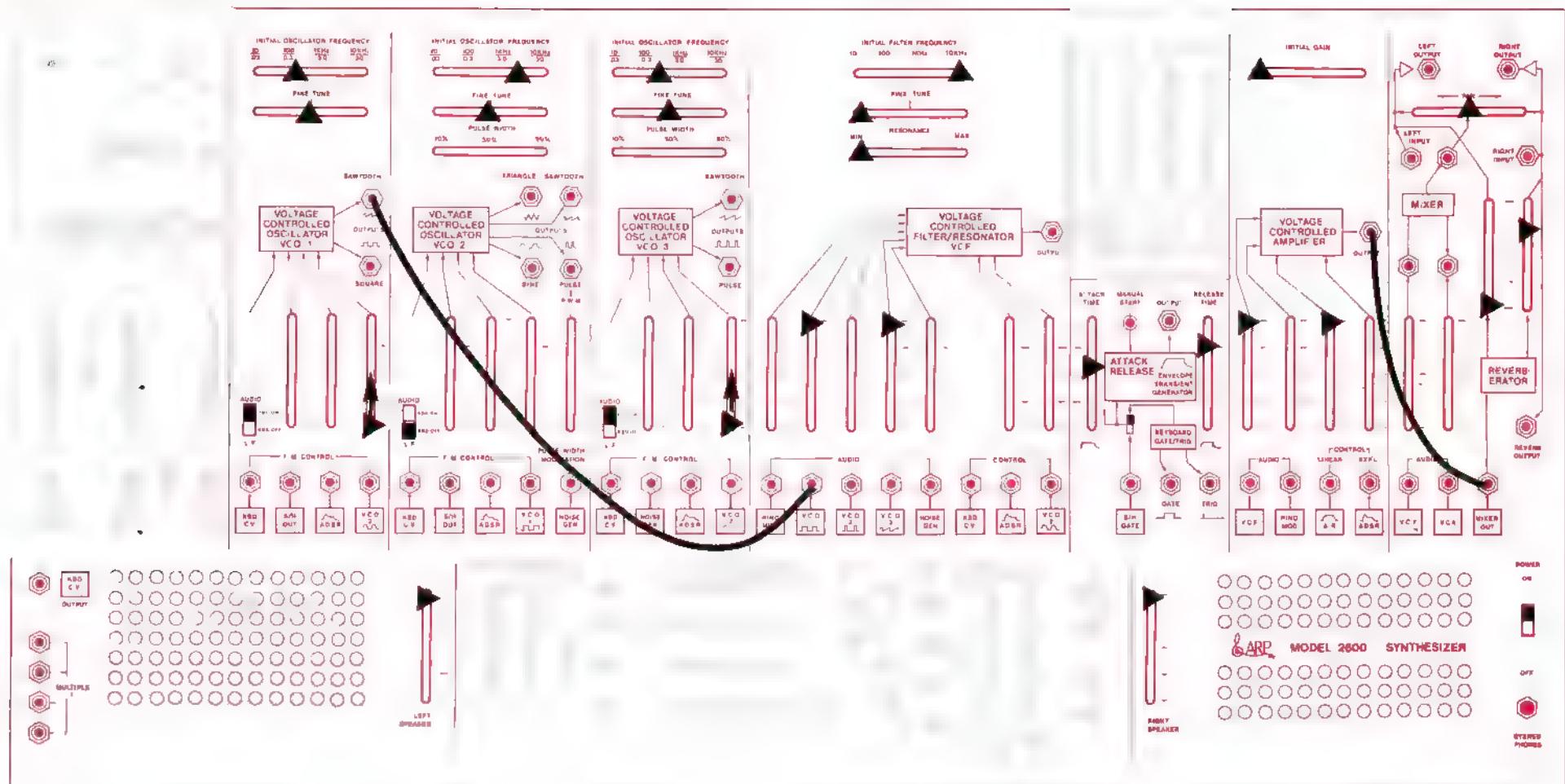
Thereminovox

121

VCO TUNING



VCO 1+3



Portamento



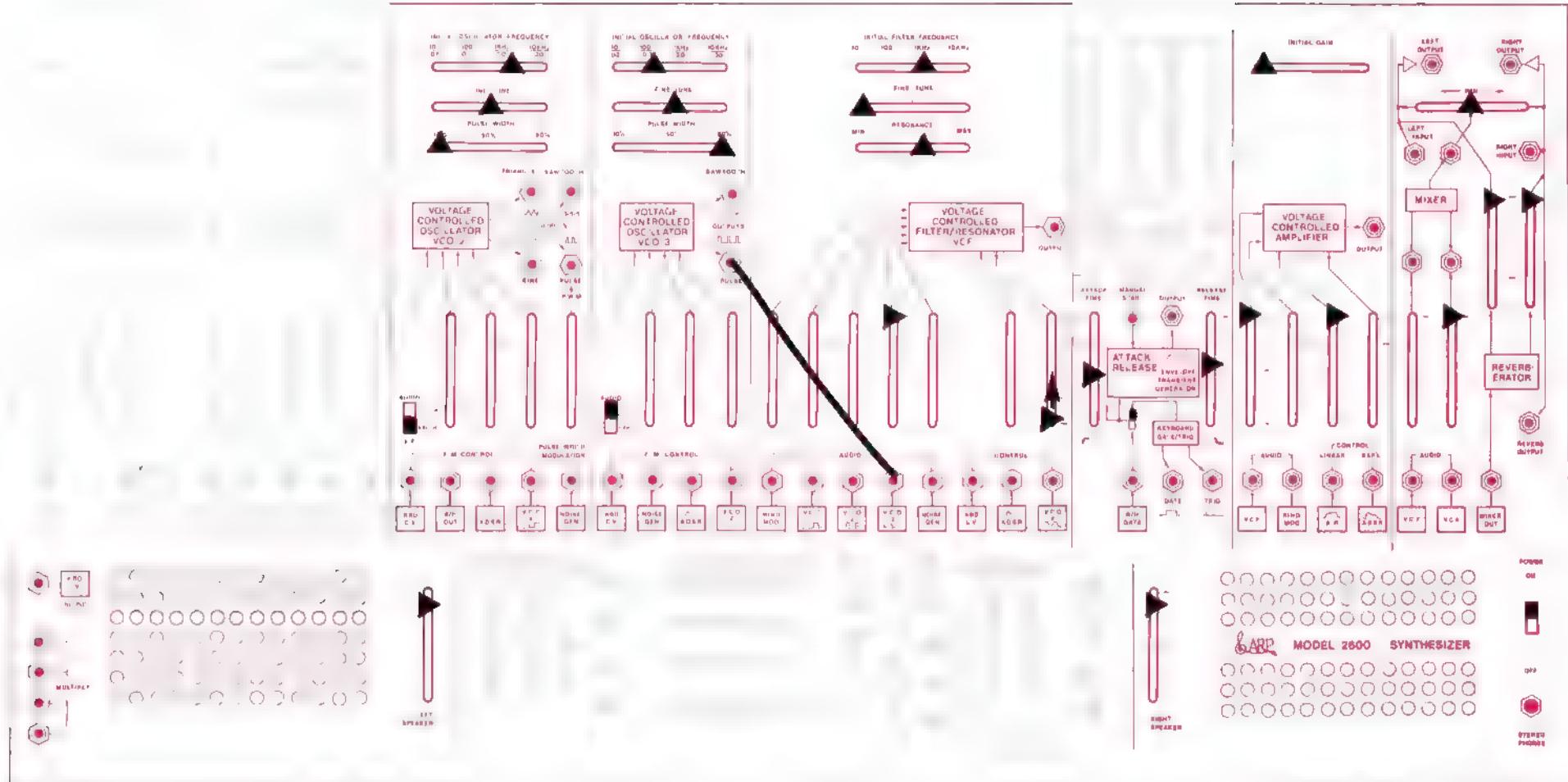
1. Tune VCO 1 and 3 to one octave below middle C
2. Listening to each oscillator individually, raise VCO 2 into each for vibrato and adjust VCO 2 frequency for speed.

2 PATCHCABLES

Cello Section

13.

VCO TUNING



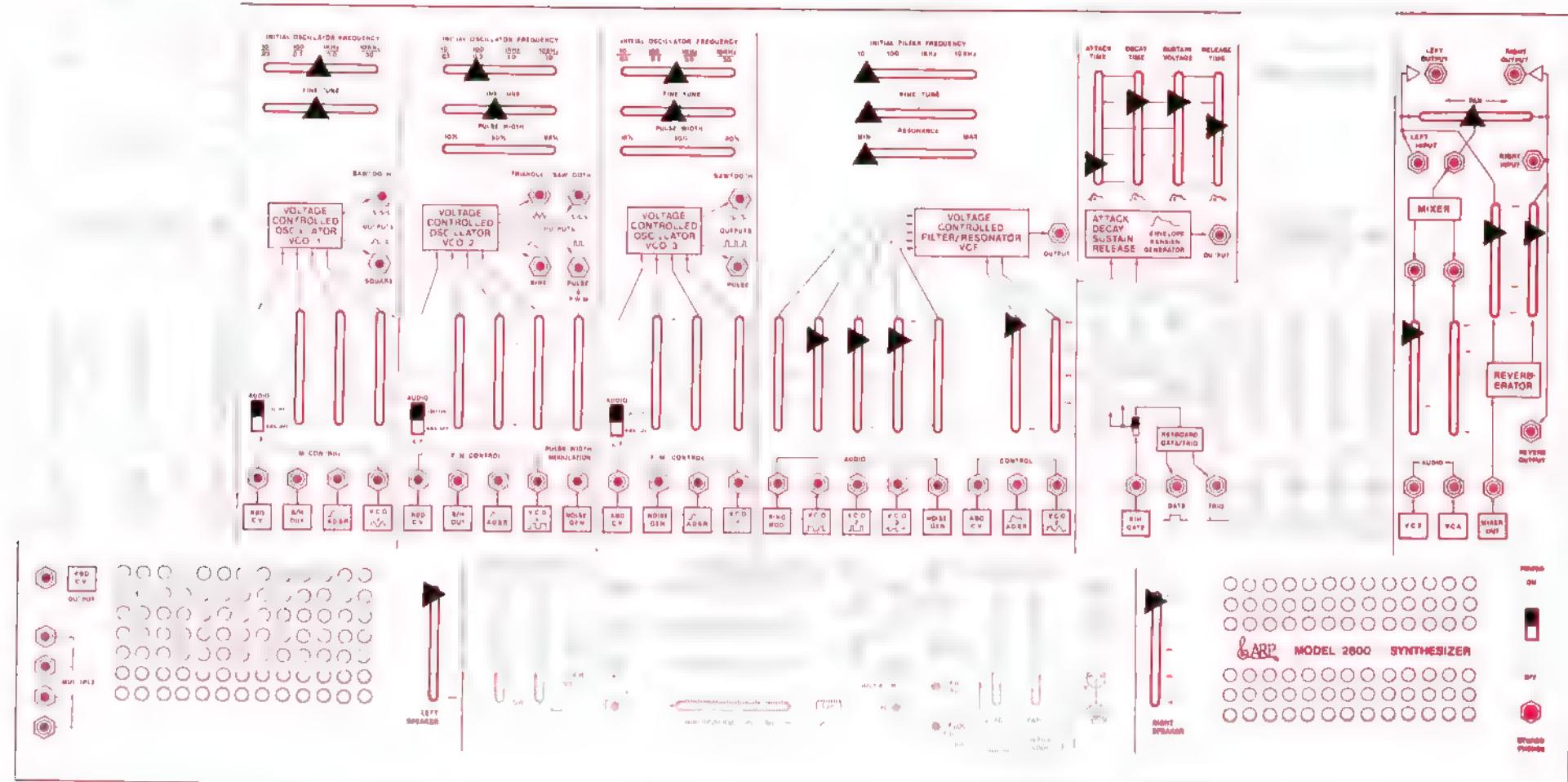
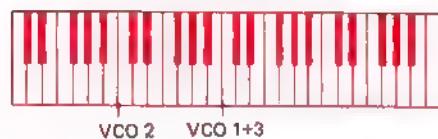
1. Tune VCO 3 to middle C.
2. Raise VCO 2 ↑ into VCF and adjust VCO 2 frequency for tremolo speed.

1 PATCHCORD

Cowboy Harmonica

14.

VCO TUNING



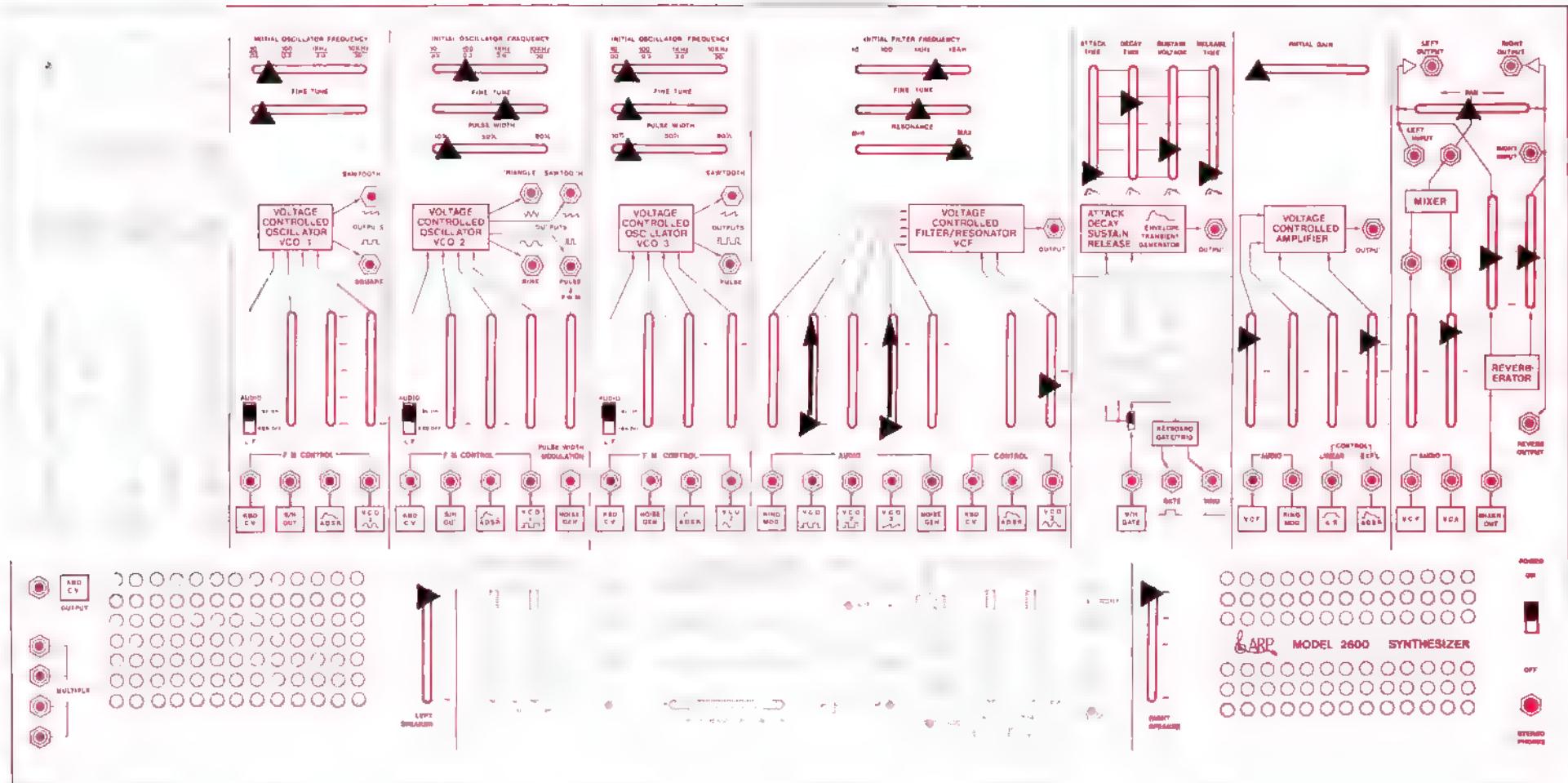
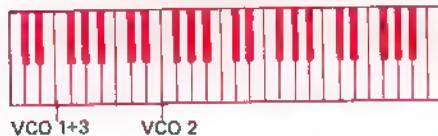
Portamento



Типы:

VCO 1 to middle C.
VCO 2 to one octave below middle C.
VCO 3 to middle C

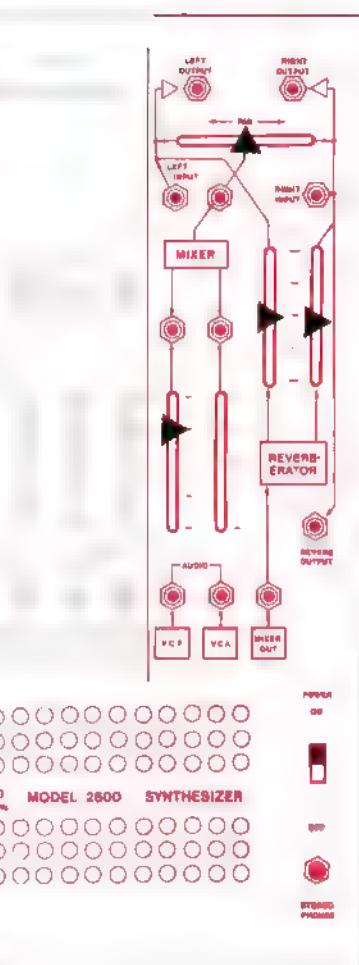
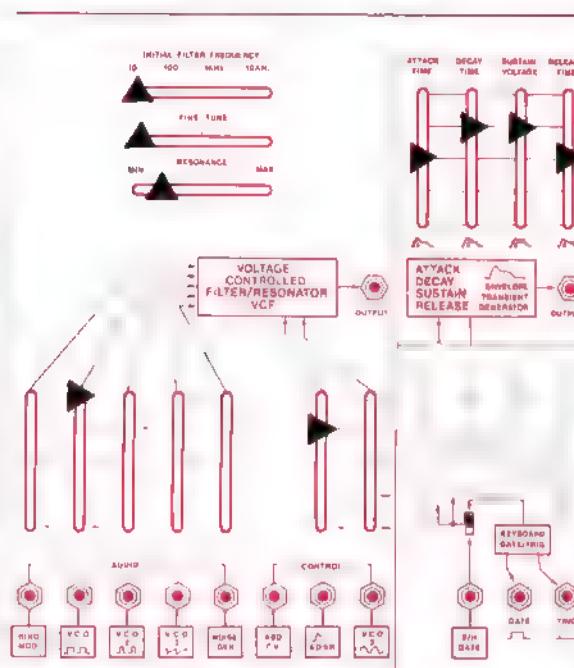
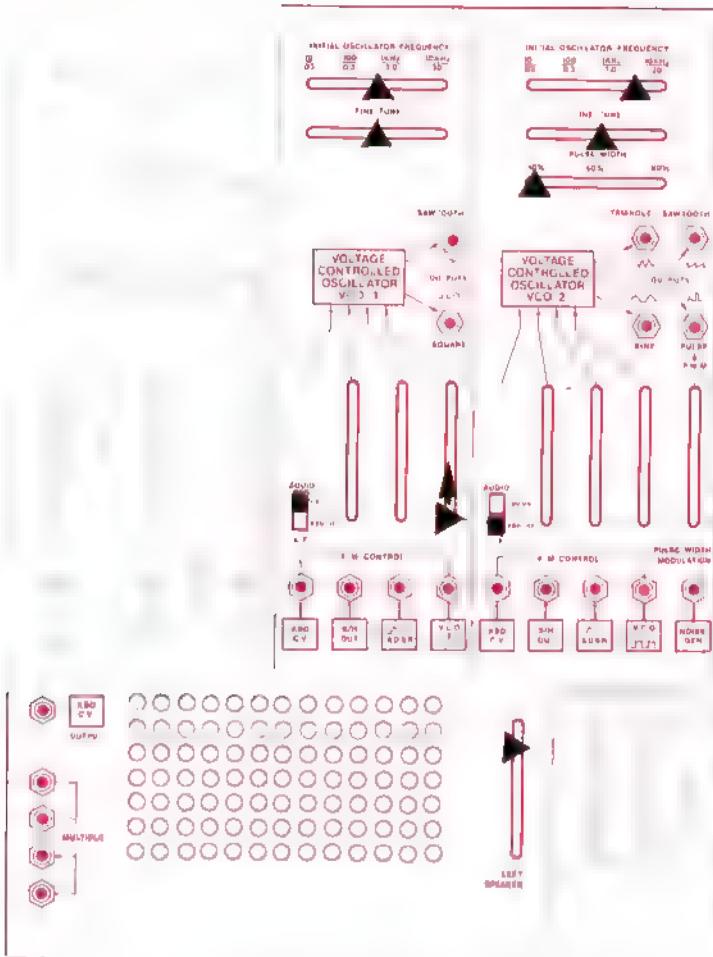
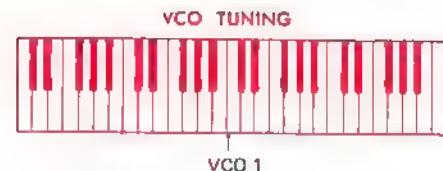
VCO TUNING



OPTION: Raise VCO 1 ↑ or VCO 3 ↑ into VCF.
Tune to one octave below VCO 2

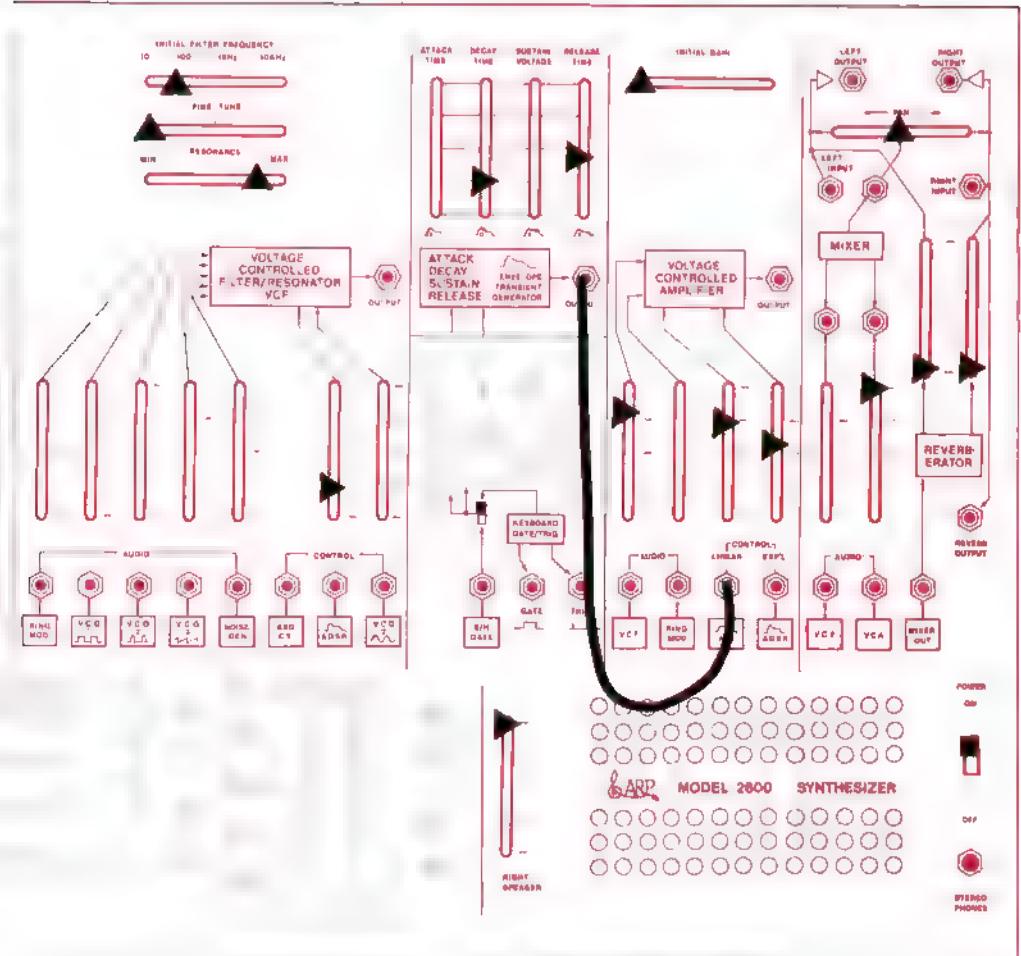
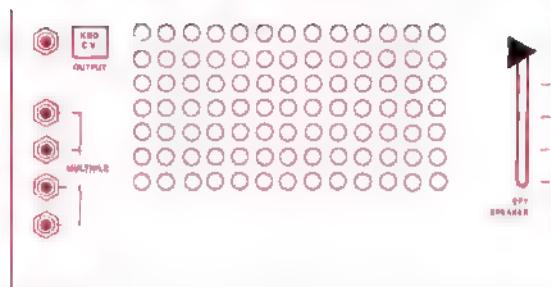
Electric Mouth-harp

16.



1. Tune VCO 1 to middle C.
2. Raise VCO 2 ↑ into VCO 1 for vibrato.
3. Adjust VCO 2 frequency for vibrato speed.

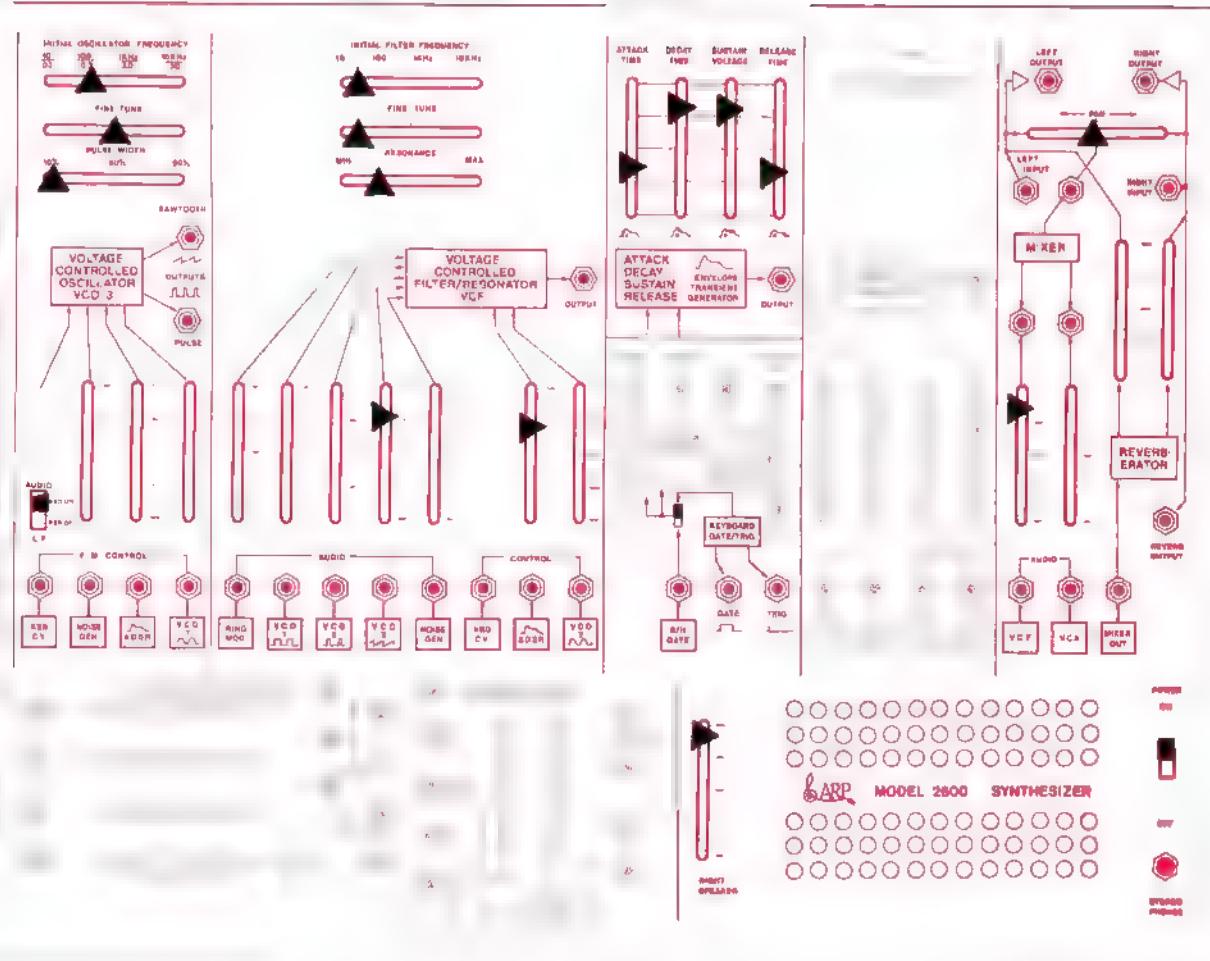
Licorice Schtück



1 PATCHCHORD

Big Bass Drum

18.



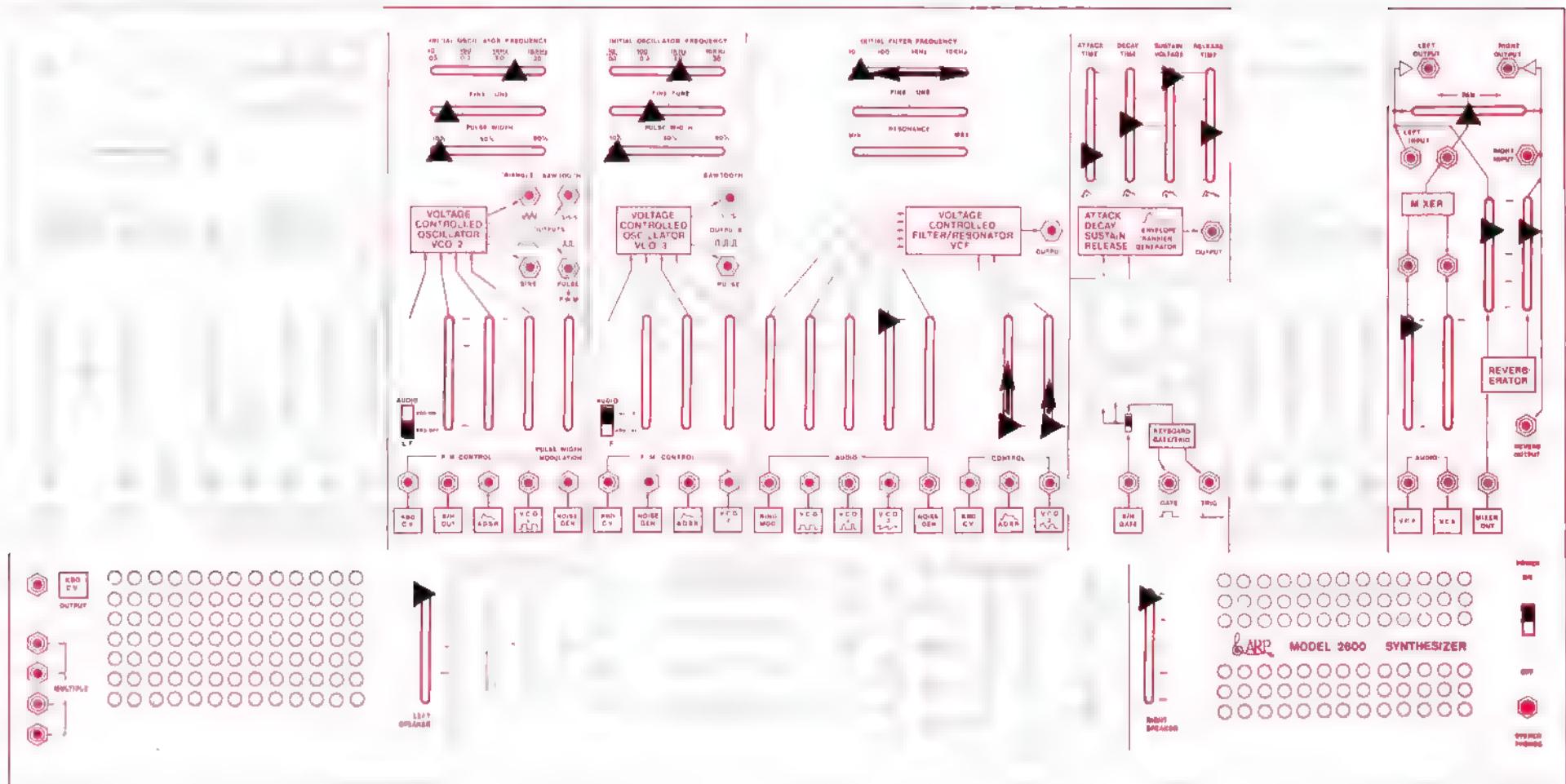
Portamento



Tune VCO 3 to one octave below middle C.
Switch Portamento on for trombone slides.

Trombone / Tuba

VCO TUNING



1. Open VCF — and tune VCO 3 to one octave above middle C.
2. Close VCF — and raise ADSR 1 into VCF for brightness.
3. Raise VCO 2 1 into VCF for tremolo.
4. Adjust VCO 2 frequency for tremolo speed.

1 PATCHCORD

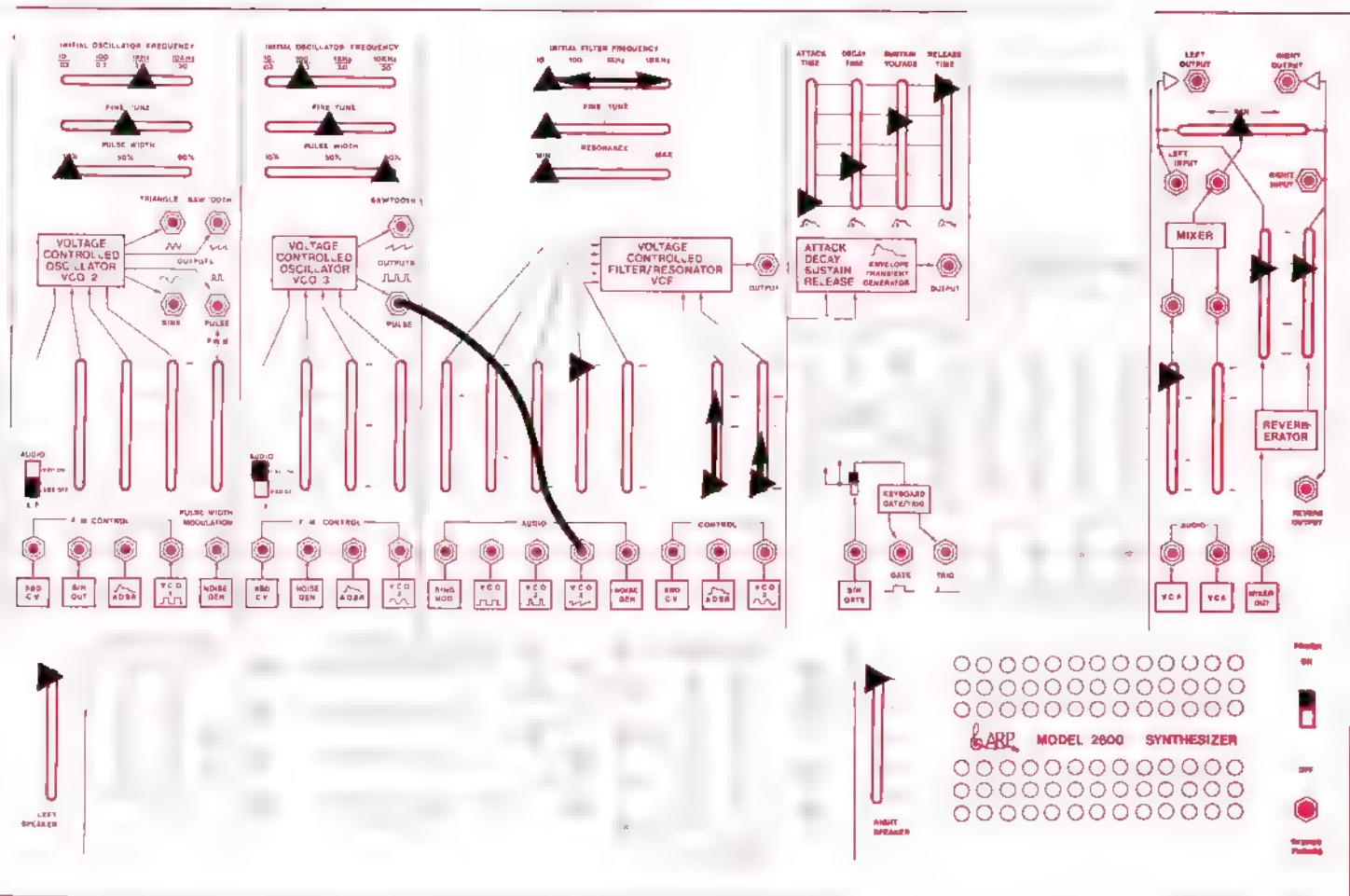
Flute

20.

VCO TUNING



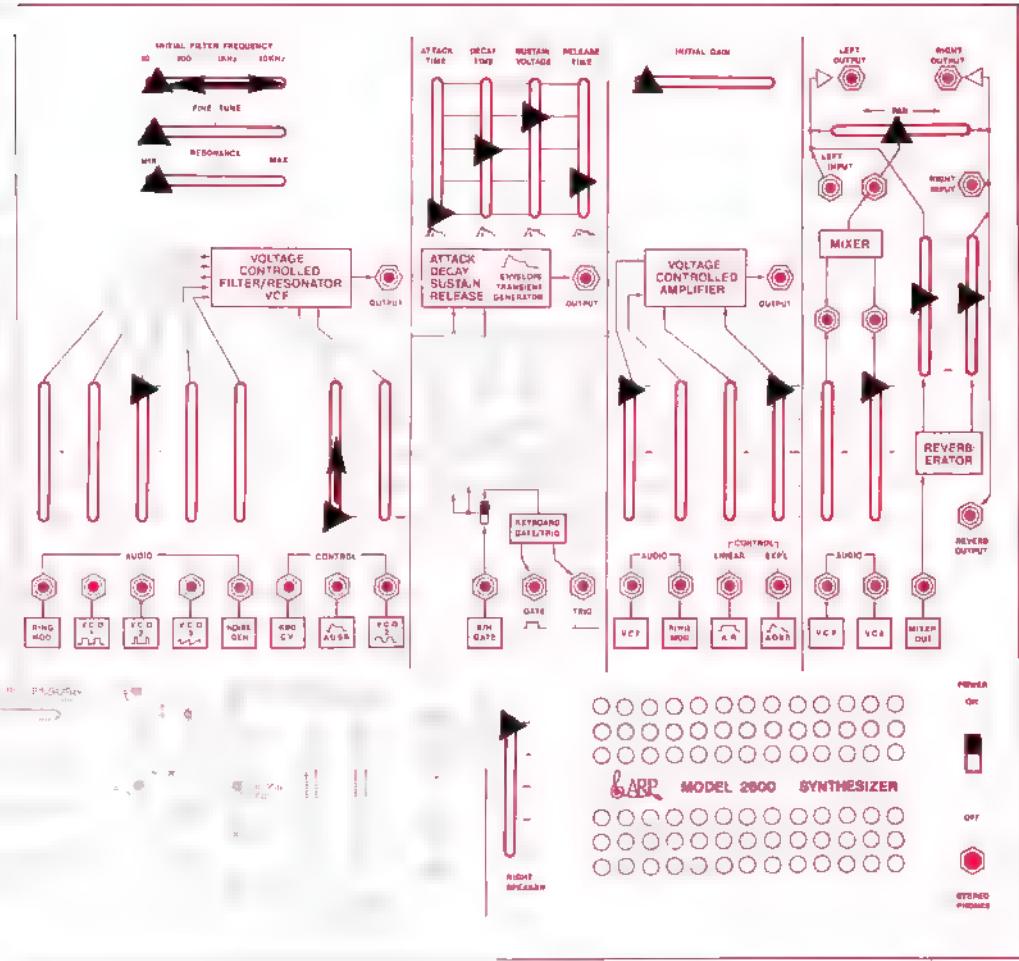
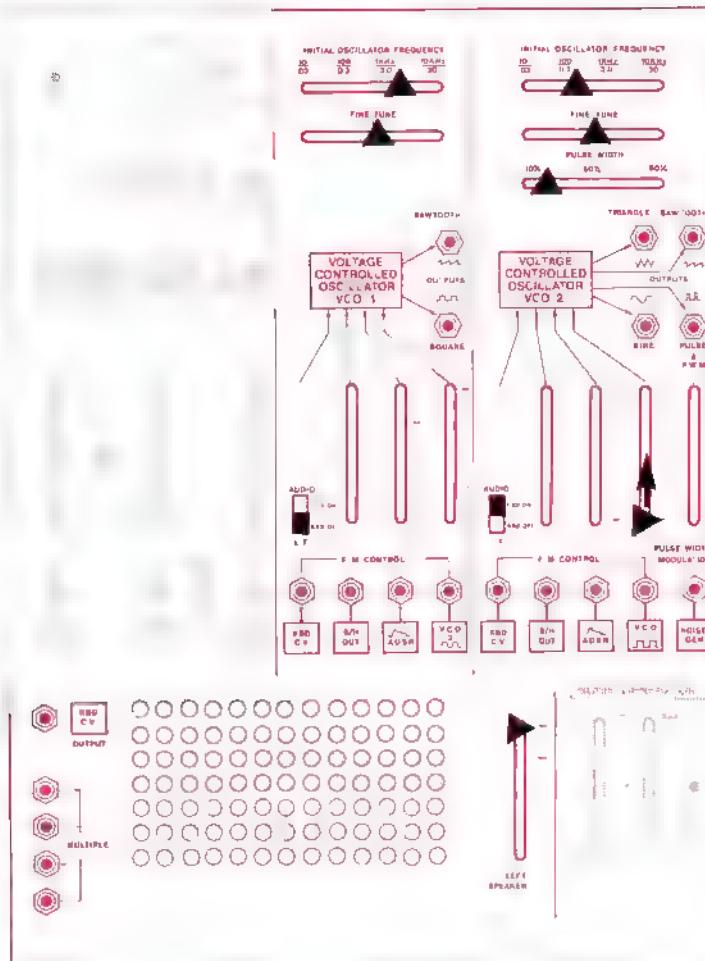
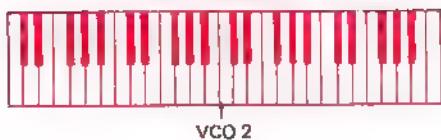
VCO 3



1. Open VCF — and tune VCO 3 to one octave below middle C.
2. Close VCF — and raise ADSR and VCO 2 ↑ into VCF.
3. Adjust VCO2 frequency for tremolo speed.

1 PATCHCORD

VCO TUNING



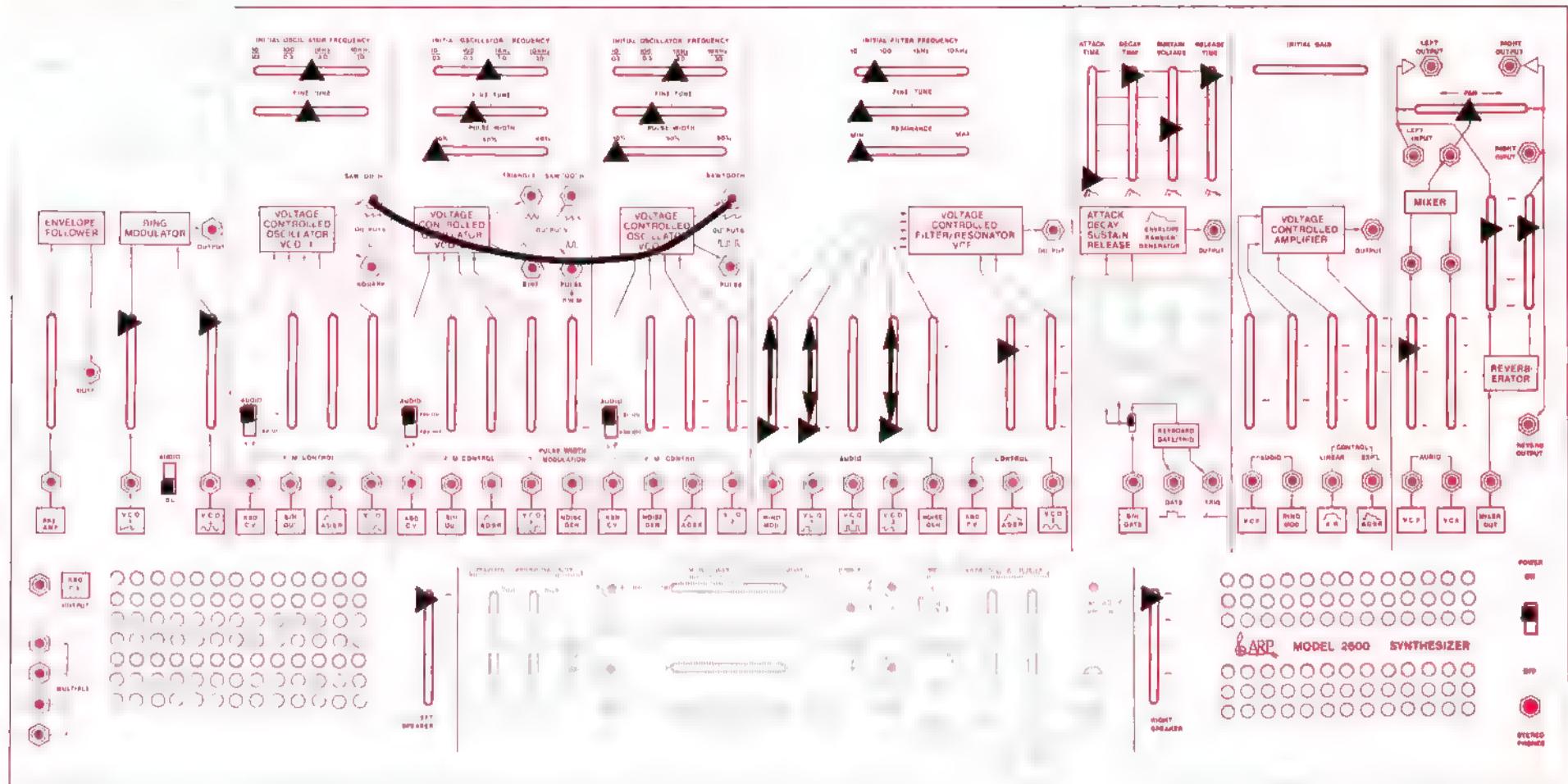
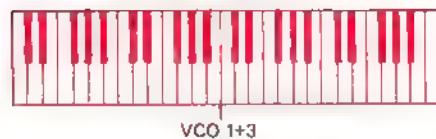
1. Open VCF — and tune VCO 2 to middle C.
2. Close VCF ← and raise ADSR ↑ into VCF.
3. Raise VCO 1 ↑ into VCO 2 and adjust VCO 1 frequency for trill speed.
4. Bring VCO 1 ↑ in and out of VCO 2 during performance for trills.

Jazz Guitar

22.

Advanced Instruments

VCO TUNING



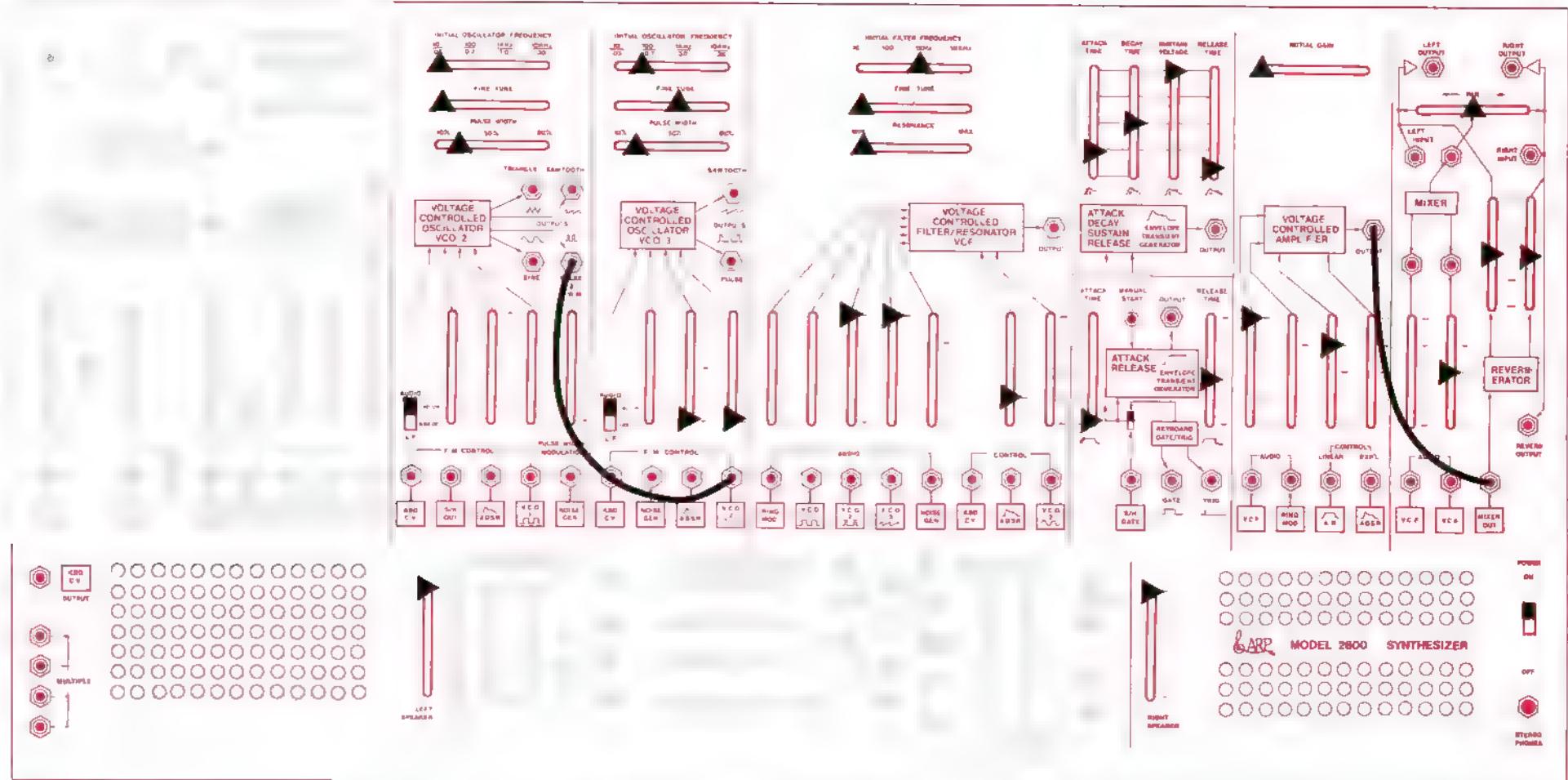
1. Raise VCO 1 and 3 ↑ into VCF.
2. Tune VCO 1 and 3 to middle C.
3. Detune VCO 3 by a few beats.
4. Close VCO 1 and 3 ↓ and raise Ring Mod ↑ into VCF.
5. Adjust VCO 2 frequency for different effects.

1 PATCHCORD

VCO TUNING



VCO 2 VCO 3



Tuning



(Pitch Bender)

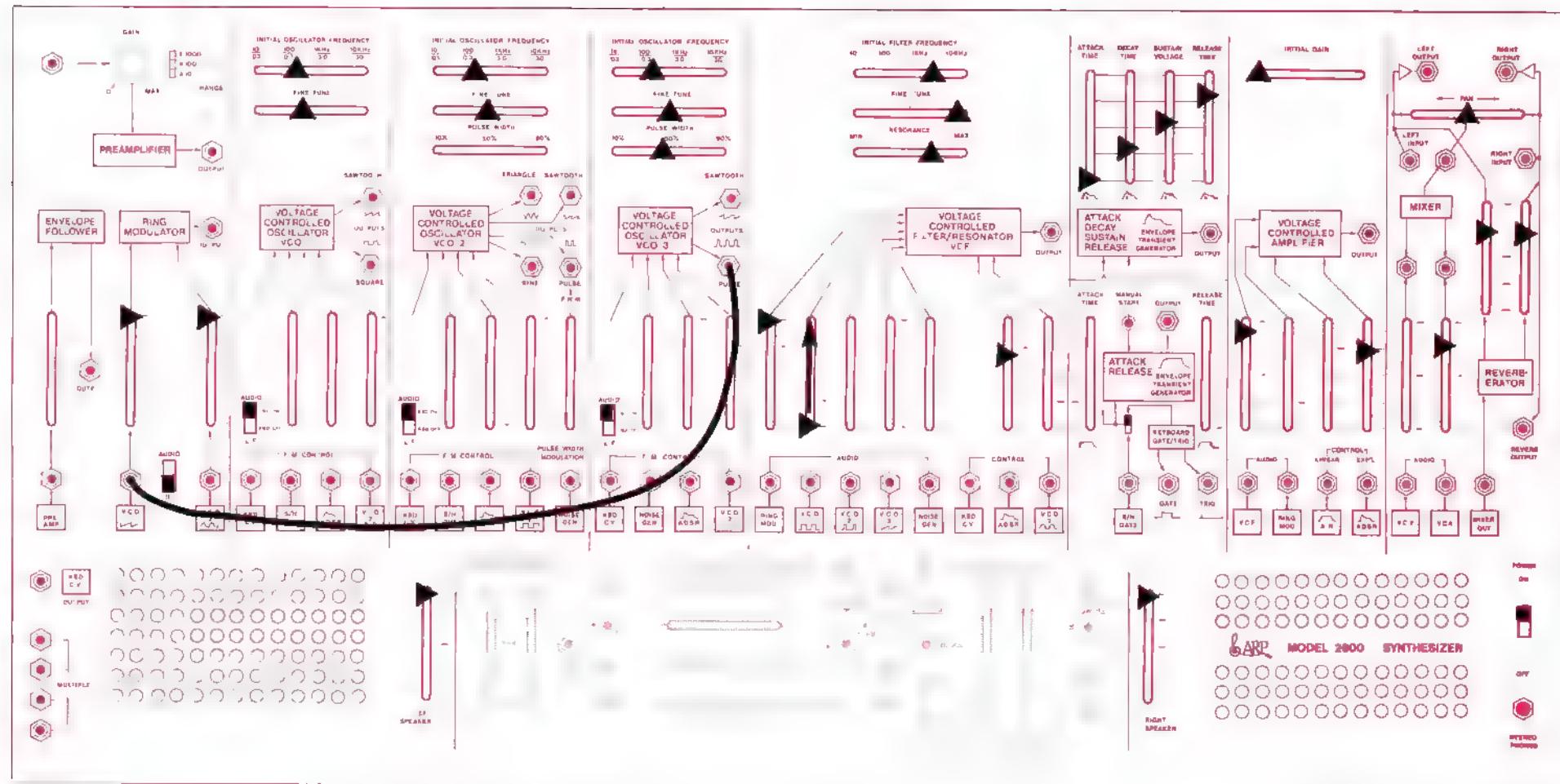
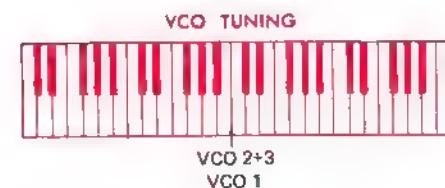
1. Play Key C3 and tune VCO 3 to an octave above VCO 2, which is tuned as shown.
2. Raise VCO 2 fully into VCO 3.
3. Raise ADSR into VCO 3 until a solid tone without beats is heard.

2 PATCHCORDS

Heavy Metal Fuzz Lead

24.

KEYBOARD RANGE TOP 2 OCTAVES



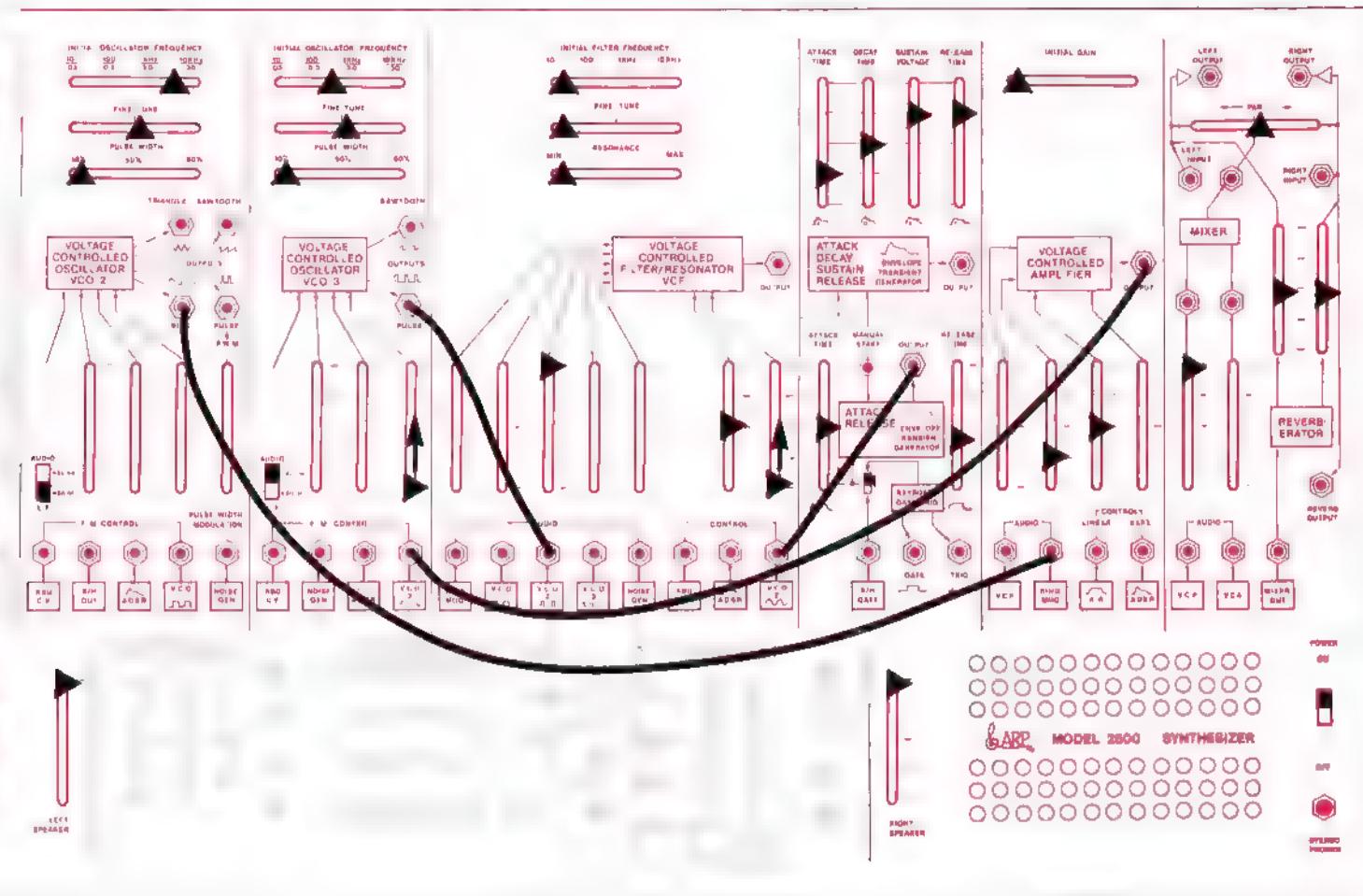
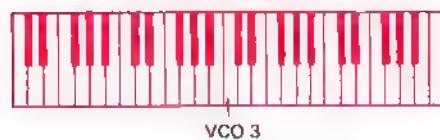
1. Tune VCO 2 and 3 to middle C.
2. Raise VCO 1 into VCF and tune a few beats off.

1 PATCHCORD

65¢ Piano

25.

VCO TUNING

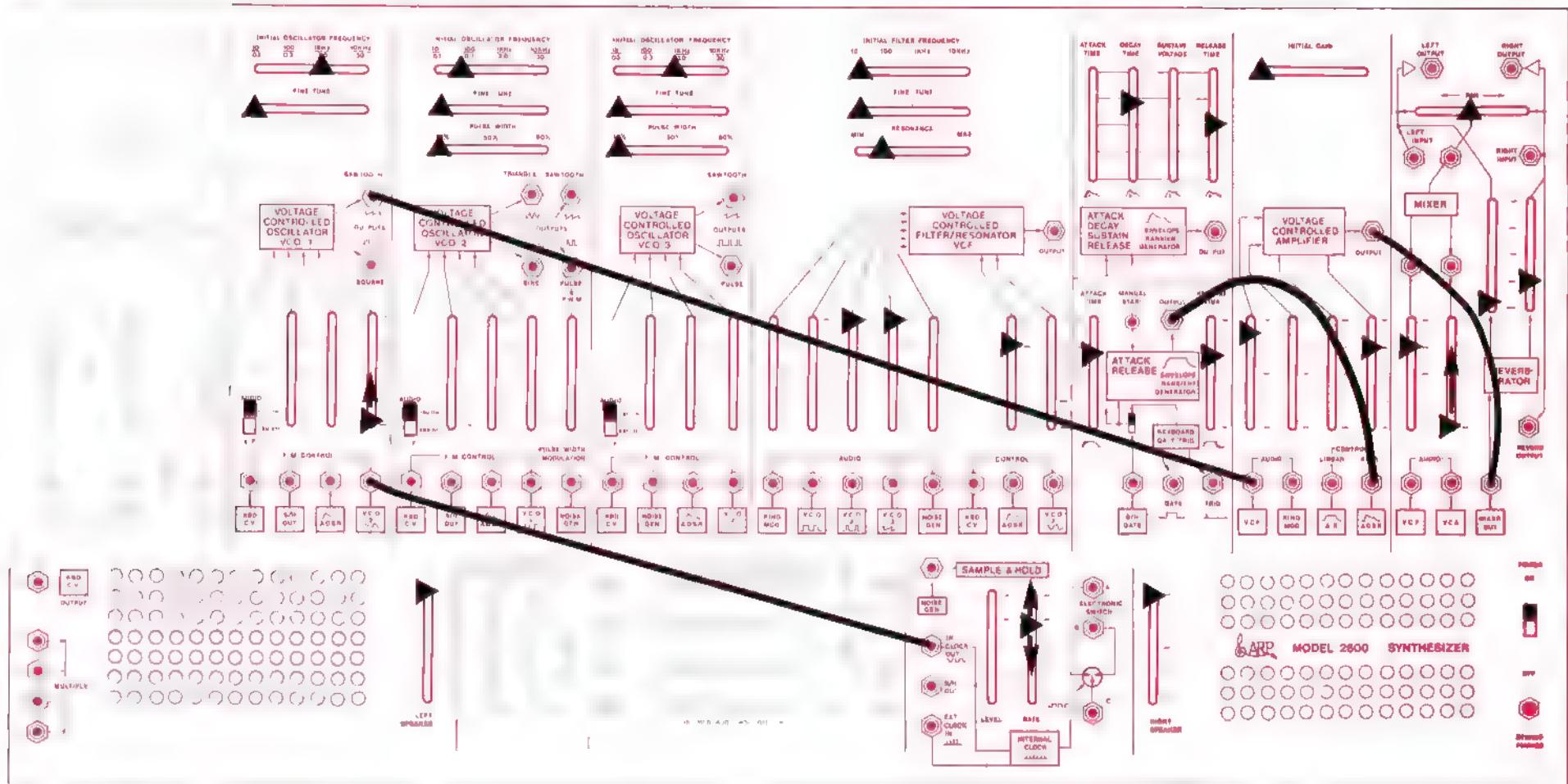
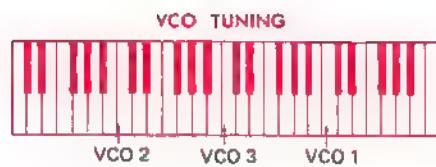


1. Tune VCO 3 to middle C.
2. Raise \uparrow into VCO 3 and adjust VCO 2 frequency for vibrato speed.
3. Raise \uparrow into VCF for delayed brilliance.

4 PATCHCORDS

Doc Trumpet

26.



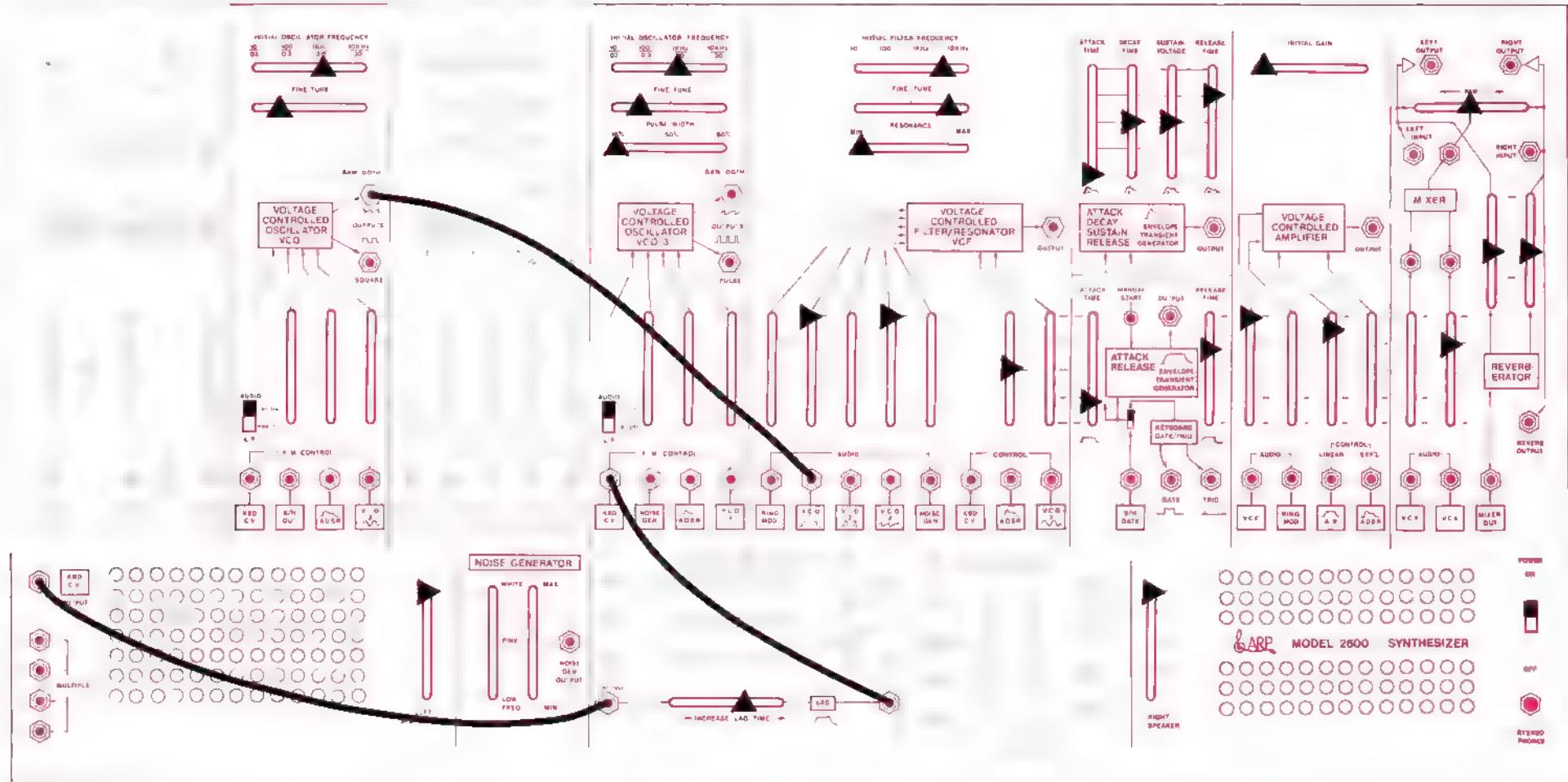
1. Tune: VCO 3 to middle C.
VCO 2 to one octave below middle C.
VCO 1 to one octave above middle C.
2. Raise into VCO 1 and adjust S/H Rate for vibrato speed.
3. Raise VCA into Mixer for violin presence.

4 PATCHCORDS

Stereo Bass & Delayed Violin

27.

VCO TUNING



Portamento



1. Tune VCO 1 and 3 to an octave above middle C.
2. Adjust Lag --- for desired keyboard delay.

3 PATCHCORDS

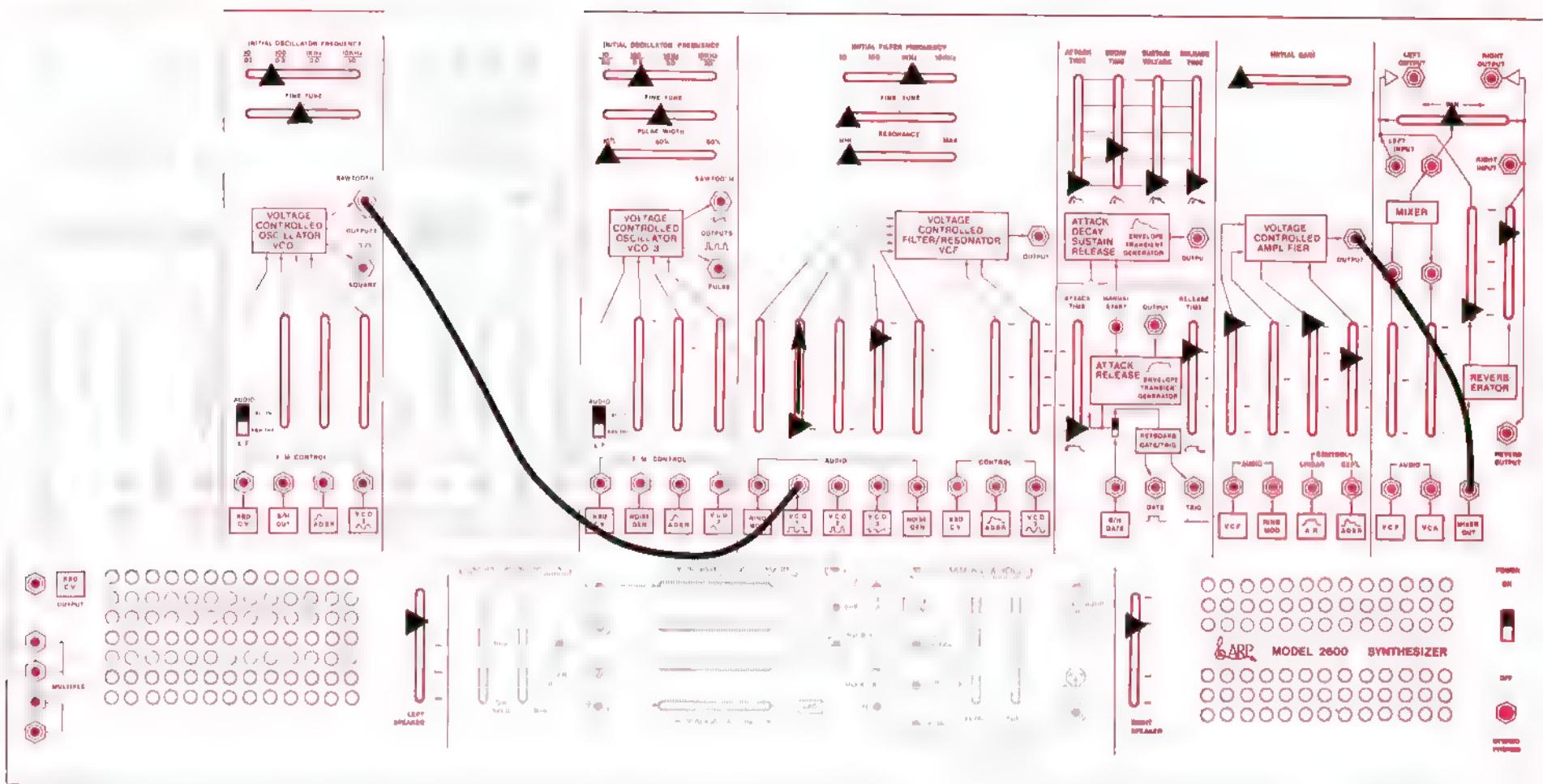
Oriental String Duo

28.

VCO TUNING



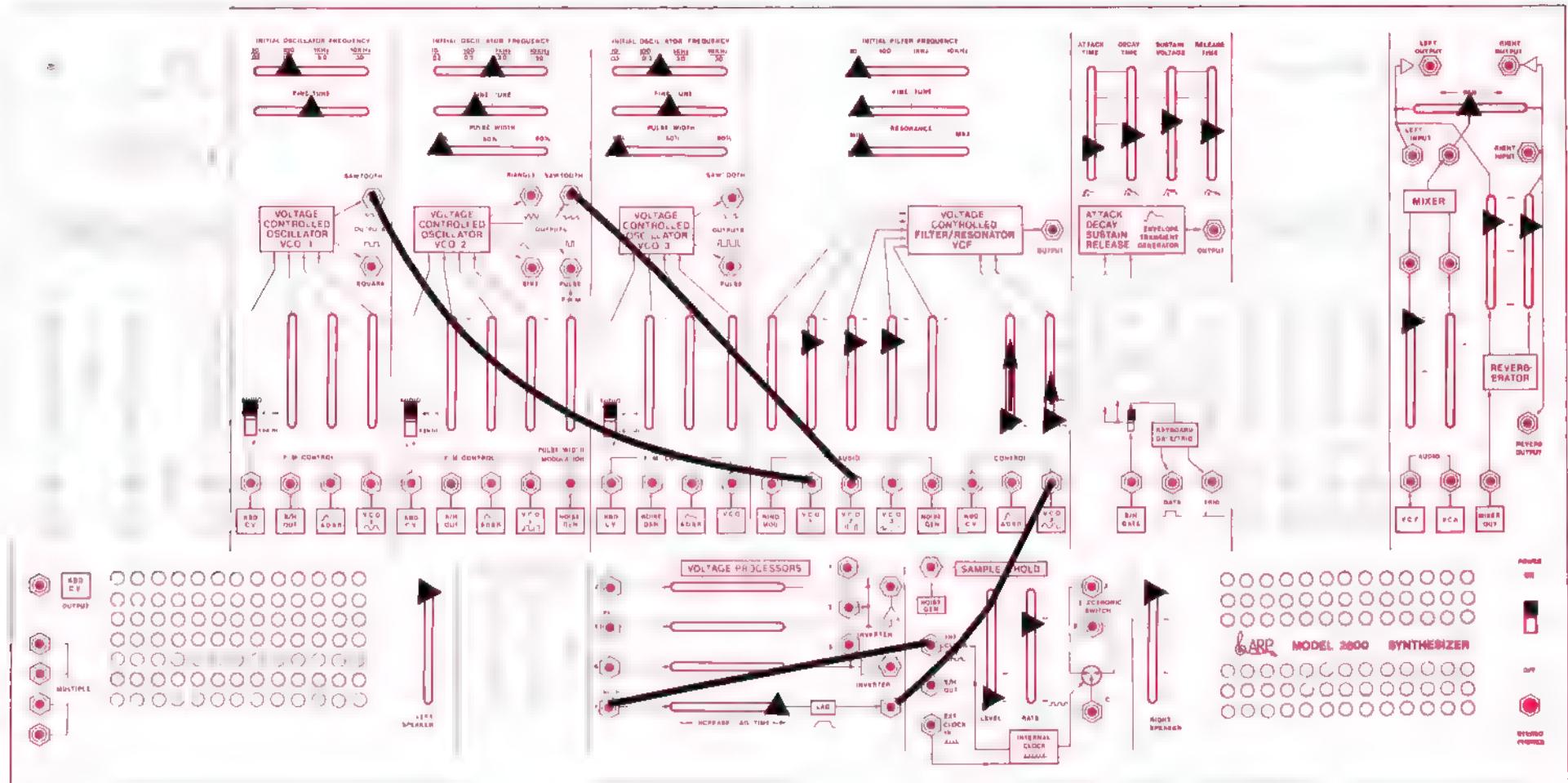
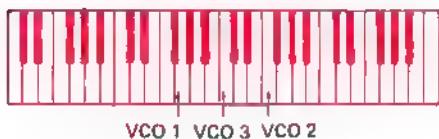
VCO 1 VCO 3



1. Tune: VCO 3 to middle C.
VCO 1 to an octave below middle C.
2. Raise VCO 1 into VCF for depth.
3. Adjust VCF frequency for brightness.

2 PATCHCORDS

VCO TUNING



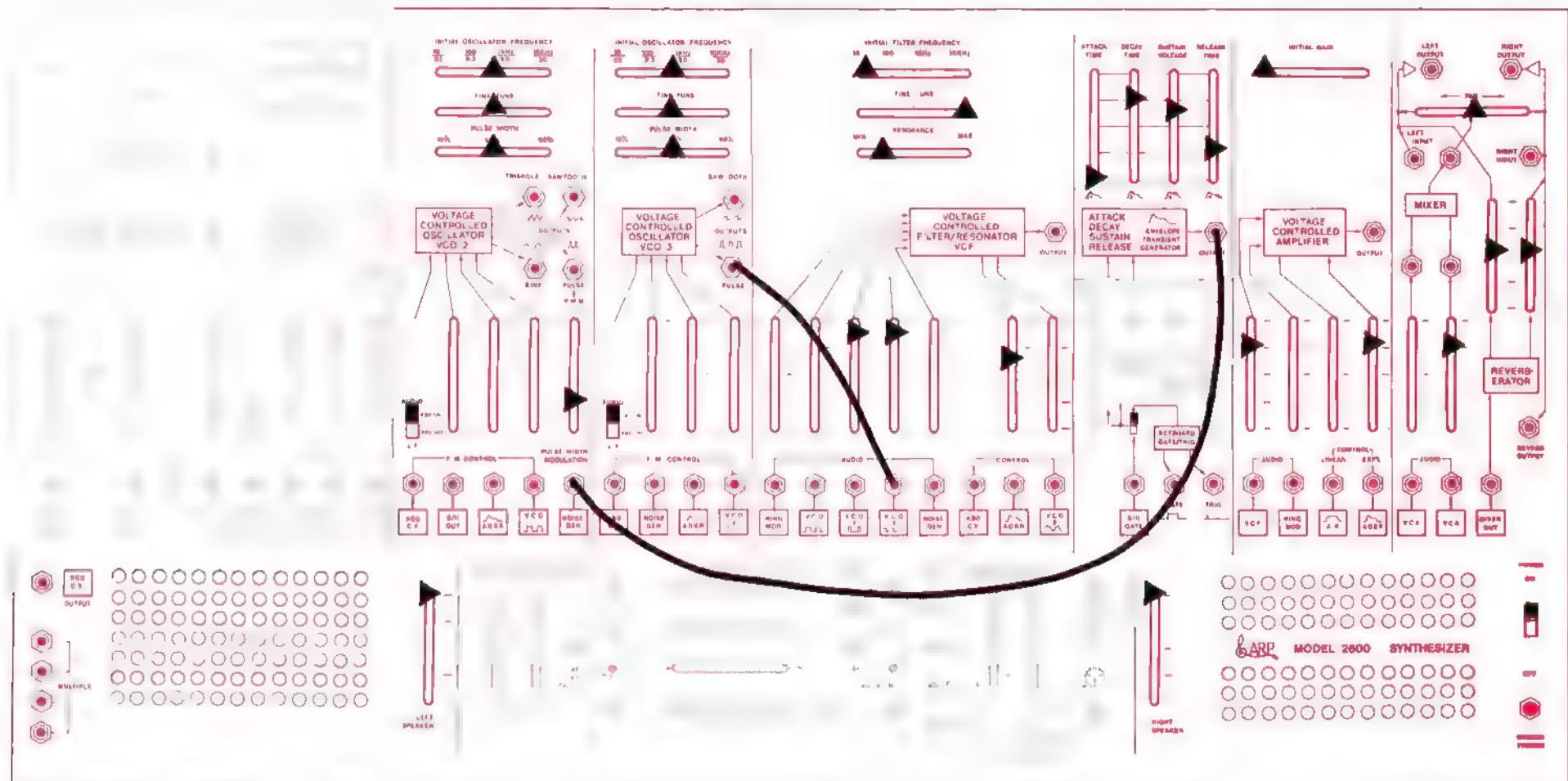
1. Tune: VCO 3 to middle C.
VCO 2 to a fourth above middle C (to F).
VCO 1 to a fourth below middle C (to G).
2. Raise ADSR ↑ into VCF for brightness.
3. Raise ↑ into VCF and adjust S/H Rate for tremolo speed.

4 PATCHCORDS

Big Band Brass

30.

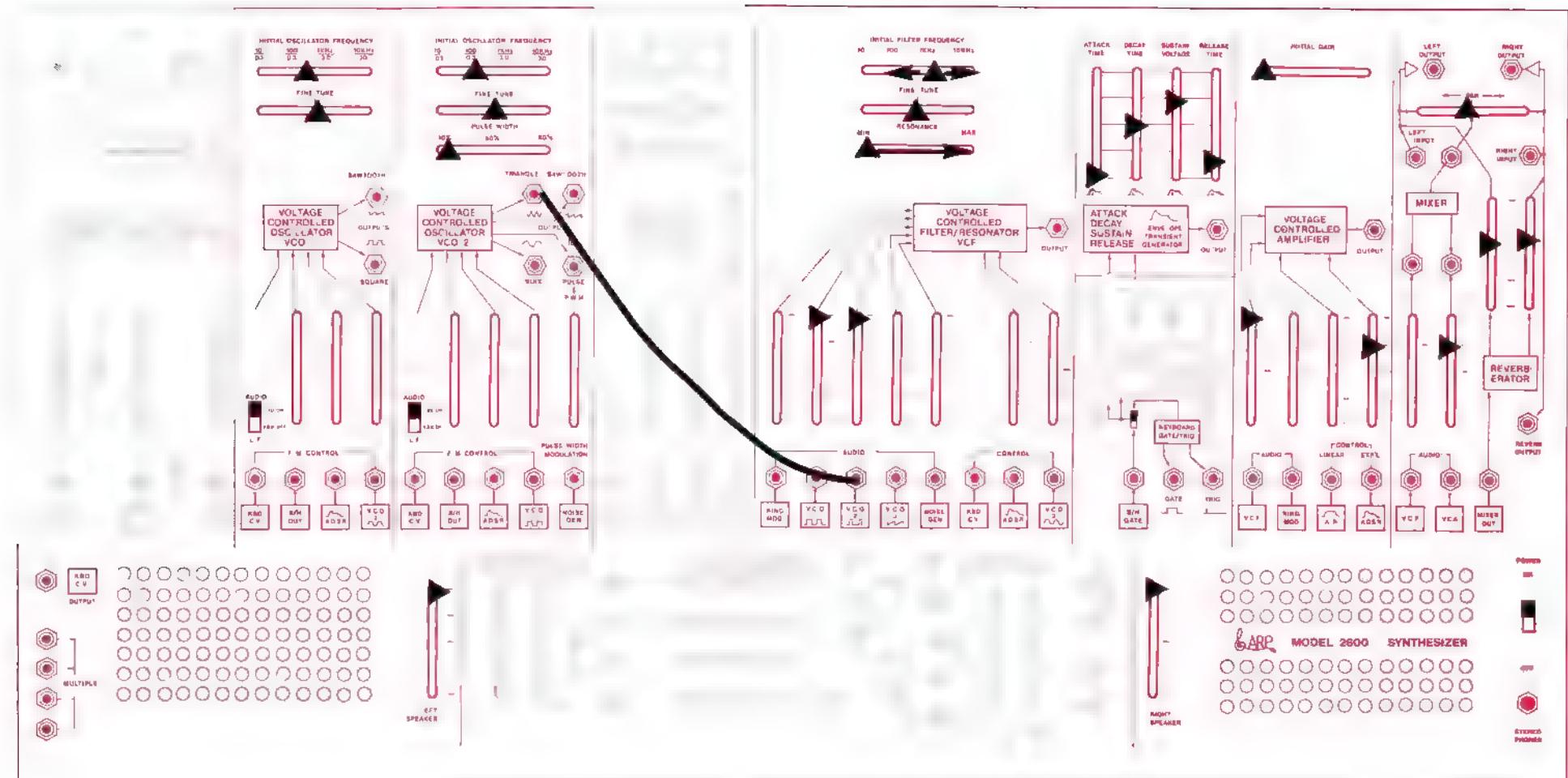
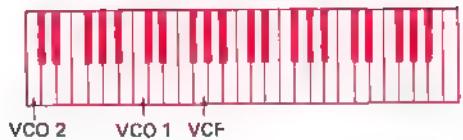
VCO TUNING



Tune VCO 2 and 3 to middle C.
Pulse Widths must be 50%.

2 PATCHCORDS

VCO TUNING

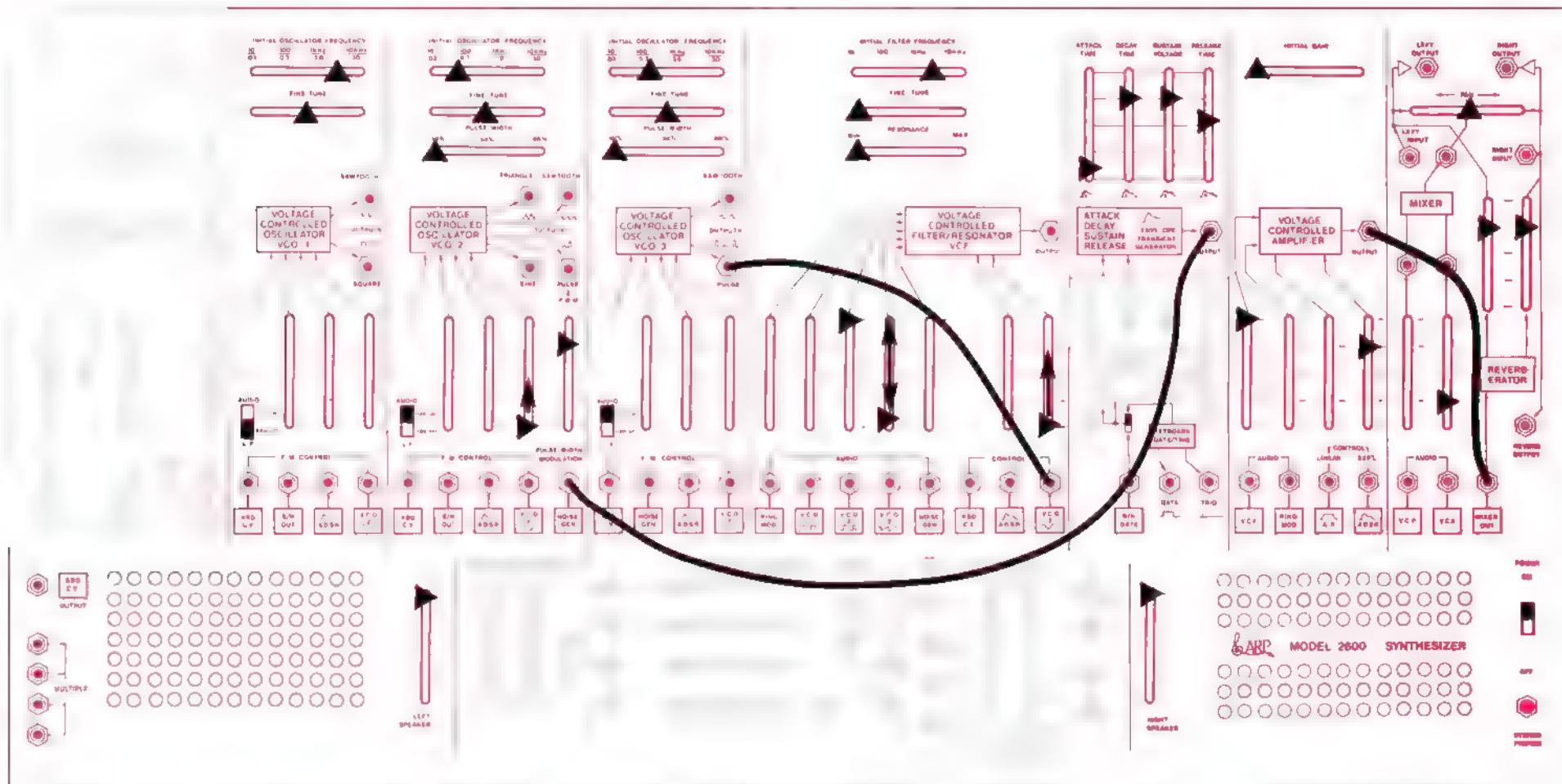
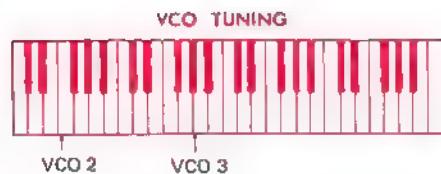


1. Open VCF → and tune VCO 1 to one octave below middle C. Tune VCO 2 to two octaves below middle C.
2. Open Resonance → and tune VCF ← to a fifth above VCO 1.

1 PATCHCORD

Zombie Organ

32.



Tuning



(Pitch Bender)

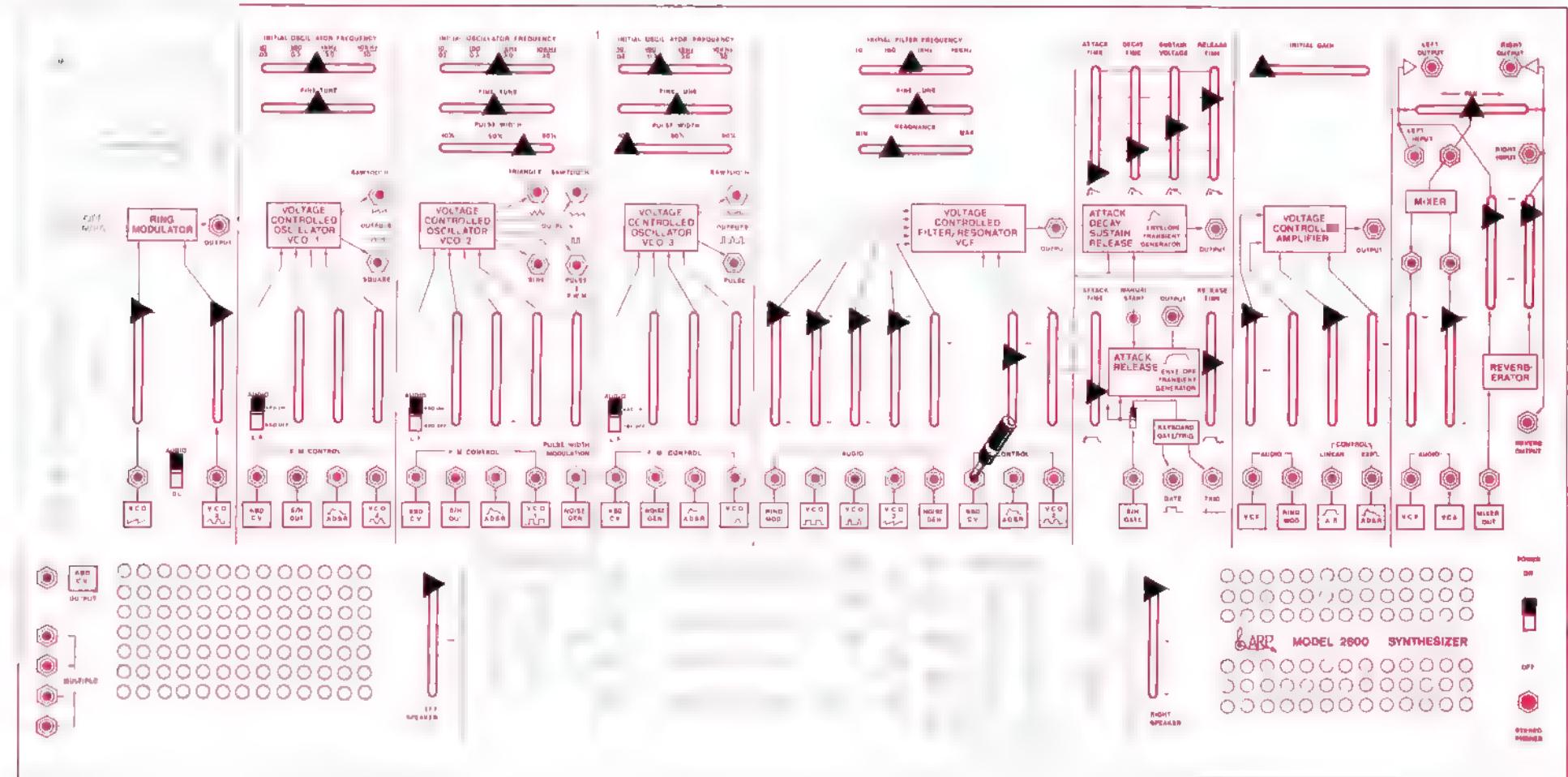
1. Tune VCO 2 as shown.
2. Raise VCO 3 \uparrow into VCF and tune VCO 3 to an octave and a major third above VCO 2. (See intro.)
3. Close VCO 3 \downarrow at VCF and raise \uparrow into VCF Control to level shown.
4. Raise VCO 1 \uparrow into VCO 2 and adjust VCO 1 frequency for vibrato speed.
5. Bring VCO 1 \uparrow in and out of VCO 2 for vibrato during performance

3 PATCHCORDS

Glitter Guitar

33.

VCO TUNING



Follow tuning instructions detailed in the Introduction.

Lead lines are to be played on the top keys.

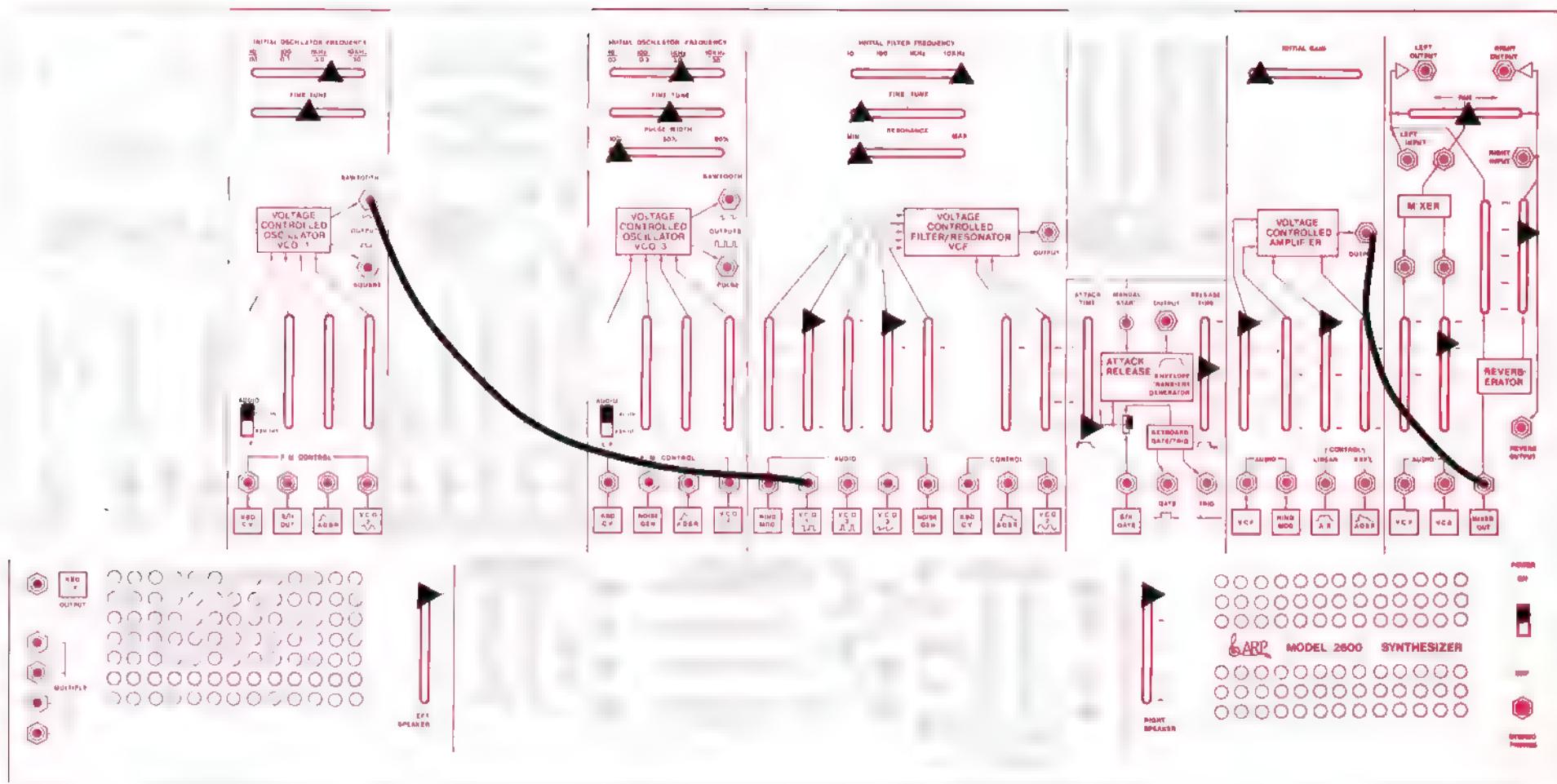
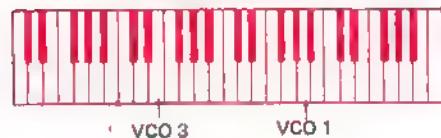
Minor chords can be heard on the bottom keys.

Marimba: Chords & Lead

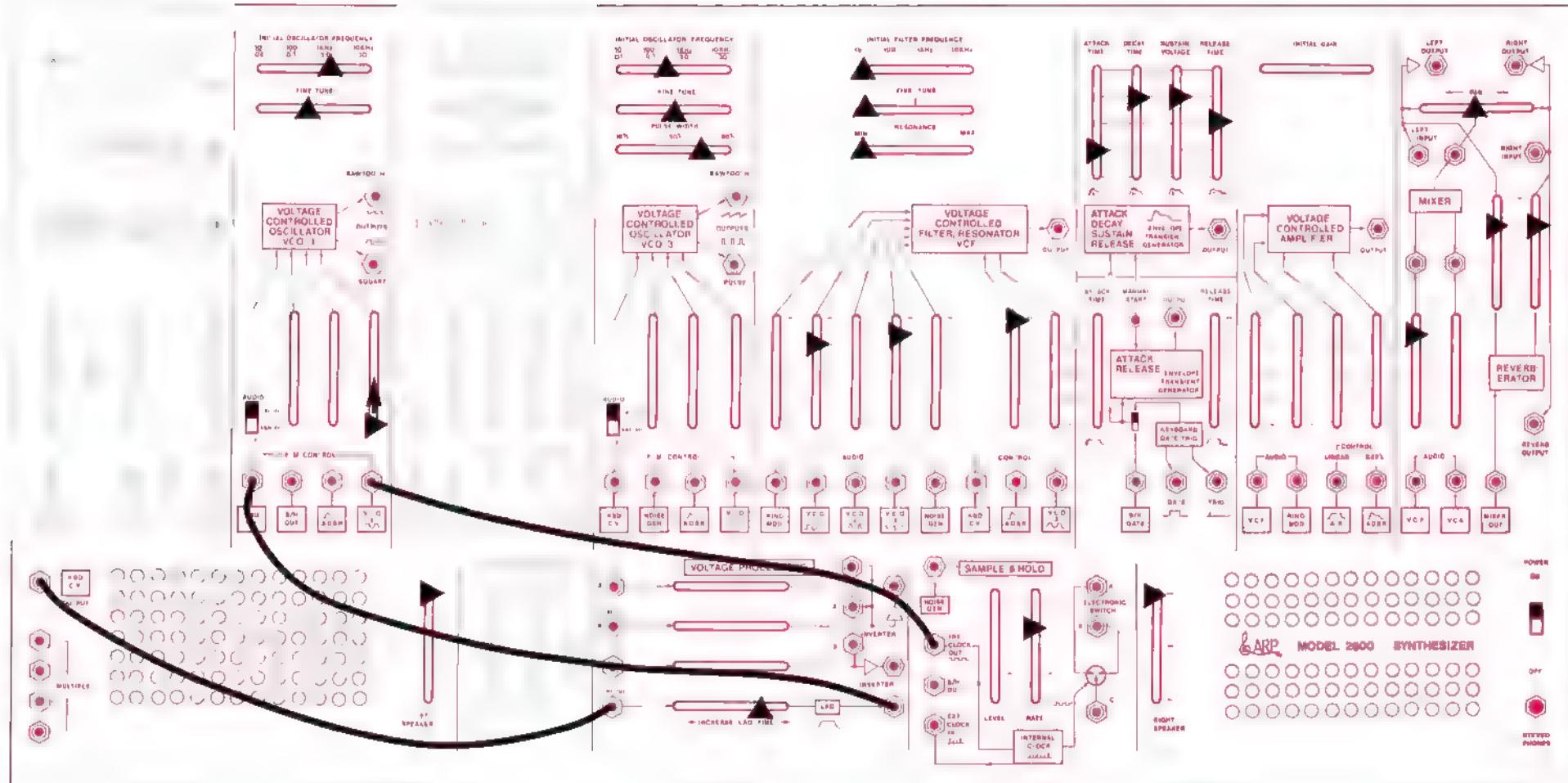
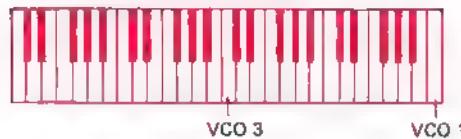
34.

KEYBOARD RANGE BOTTOM 2 OCTAVES

VCO TUNING



VCO TUNING

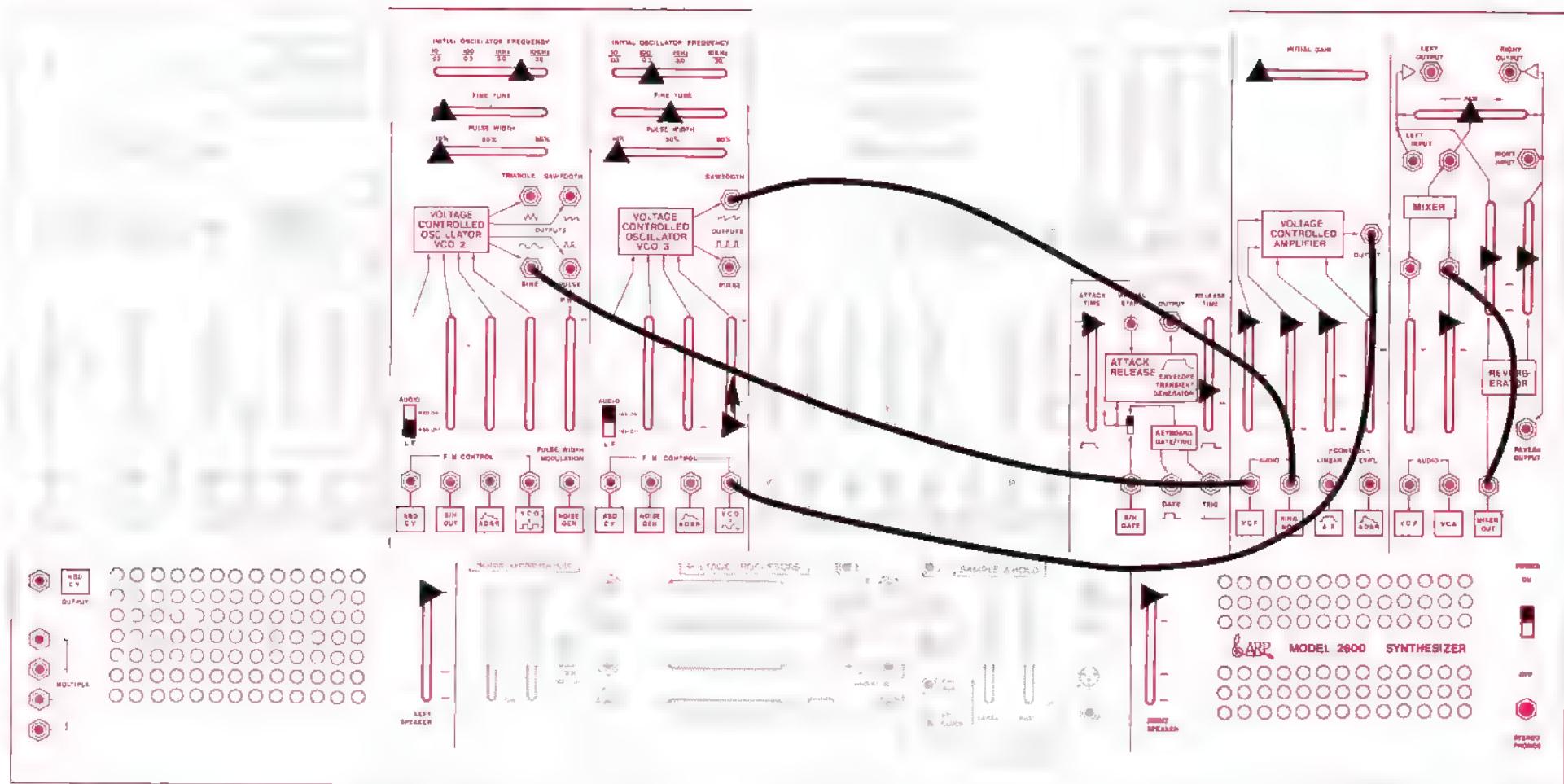
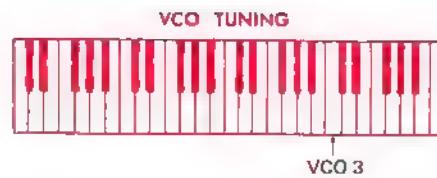


1. **Tune** VCO 3 to middle C.
VCO 1 to two octaves above middle C.
2. **Raise** | into VCO 1 and adjust S/H Rate for vibrato speed.
3. **Note:** Whistle will have vibrato and glide, Trumpet is straight

3 PATCHCORDS

Pennywhistle & Trumpet

36.



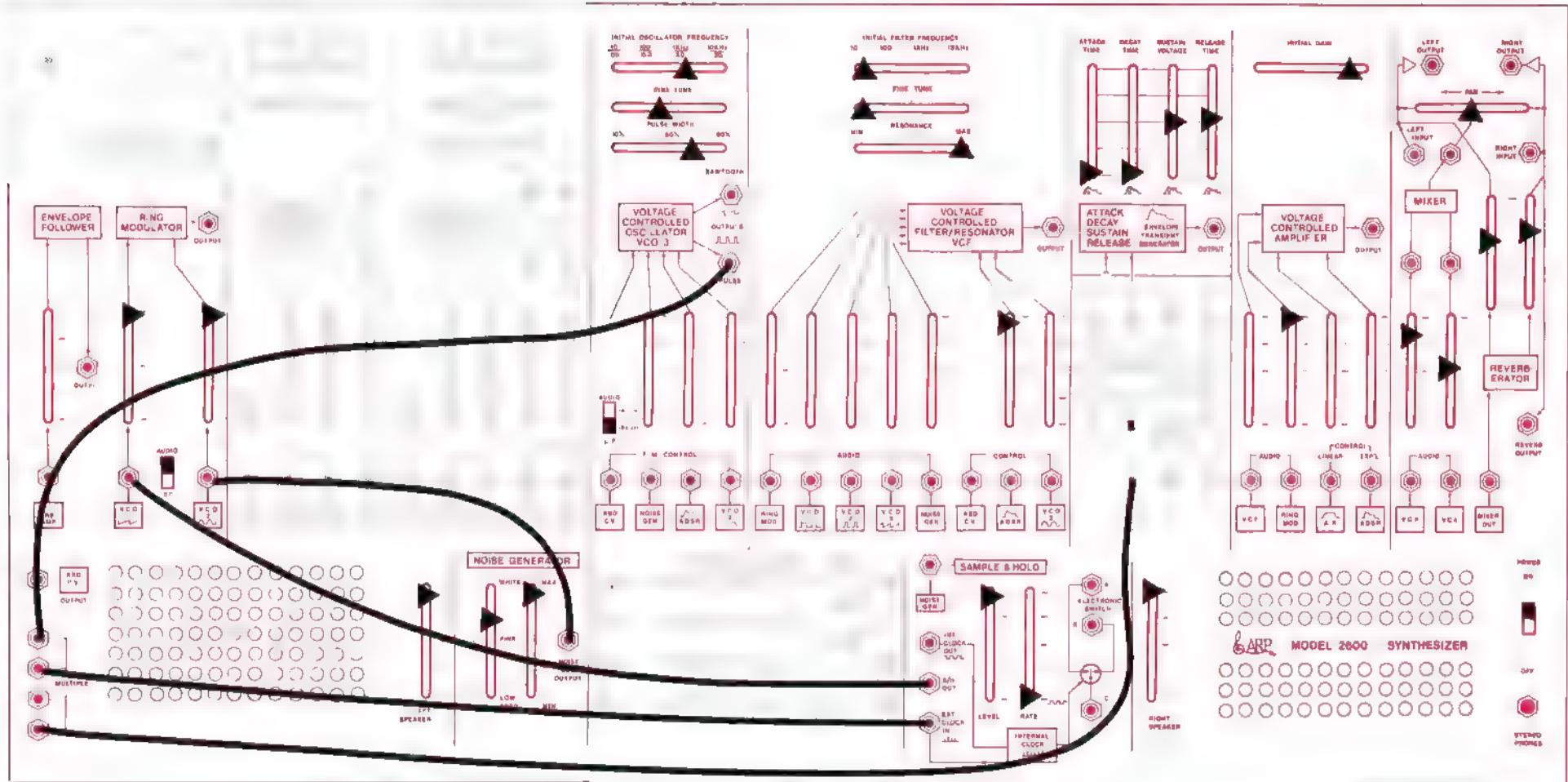
1. Tune VCO 3 to an octave above middle C.
2. Raise VCO 2 \sim into VCO 3 and adjust VCO 2 frequency for vibrato speed.

Note: Play legato for vibrato, play staccato for no vibrato.

Violin with Delayed Vibrato

37.

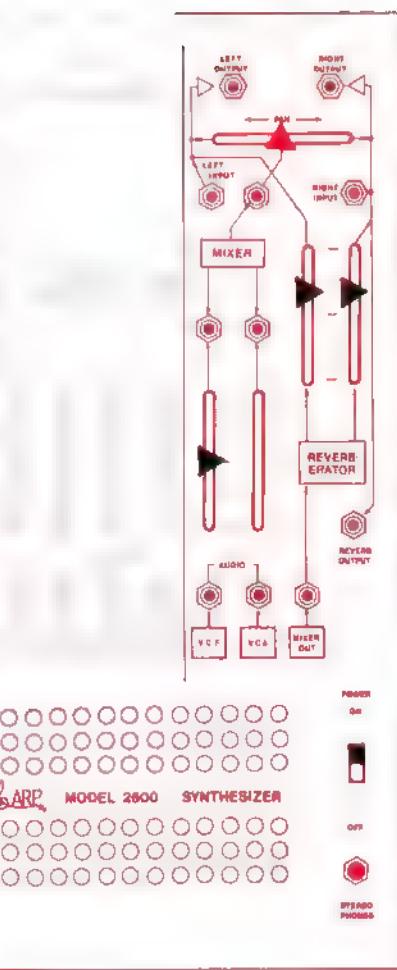
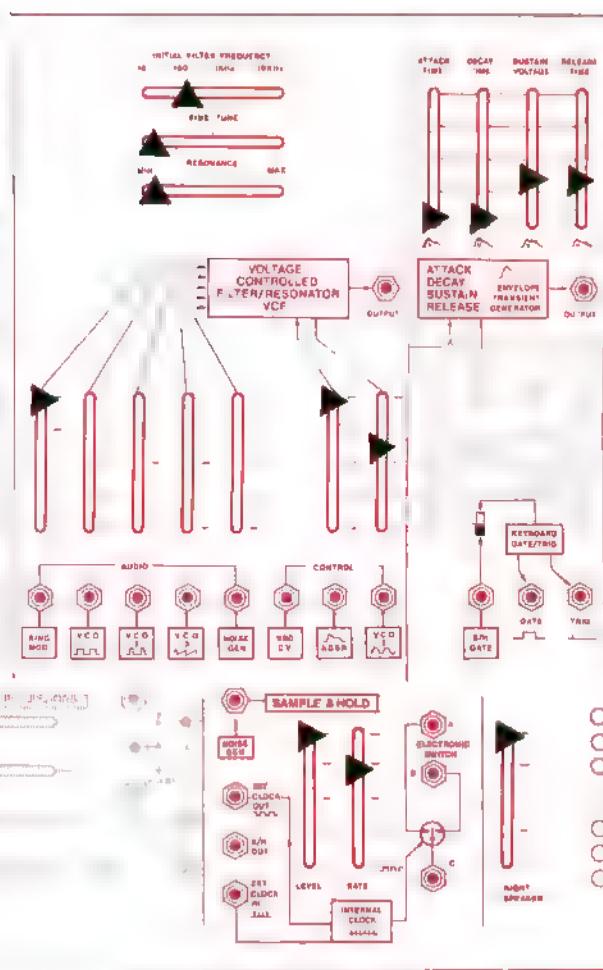
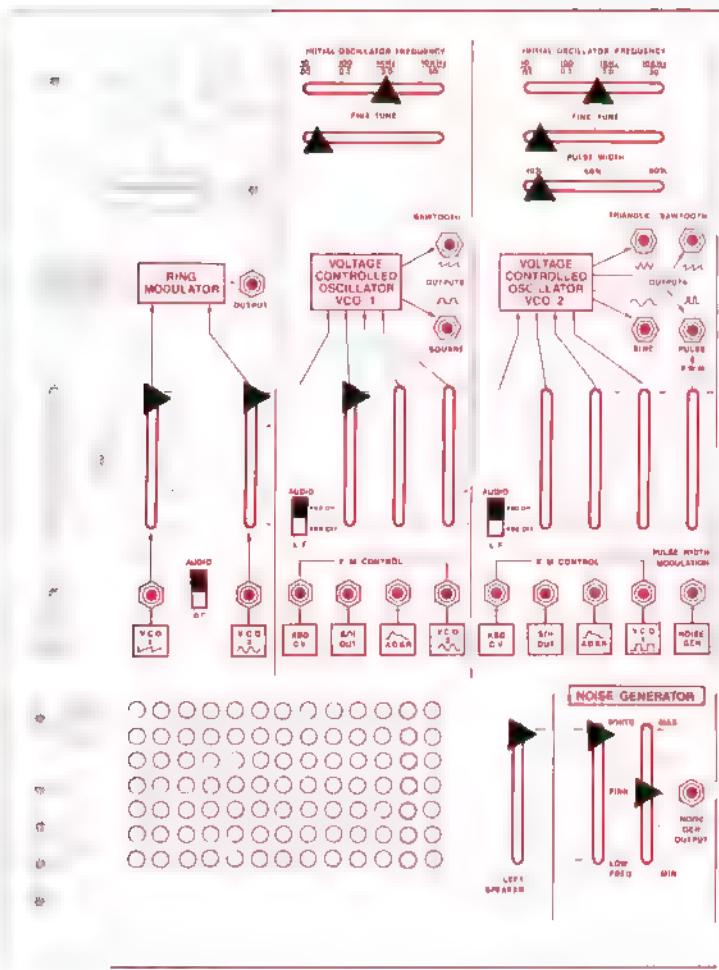
Rhythms



Adjust:
VCO 3 frequency for tempo.
ADSR into VCF for BASS Drum timbre

Swing Traps: Hi-Hat & Bass Drum

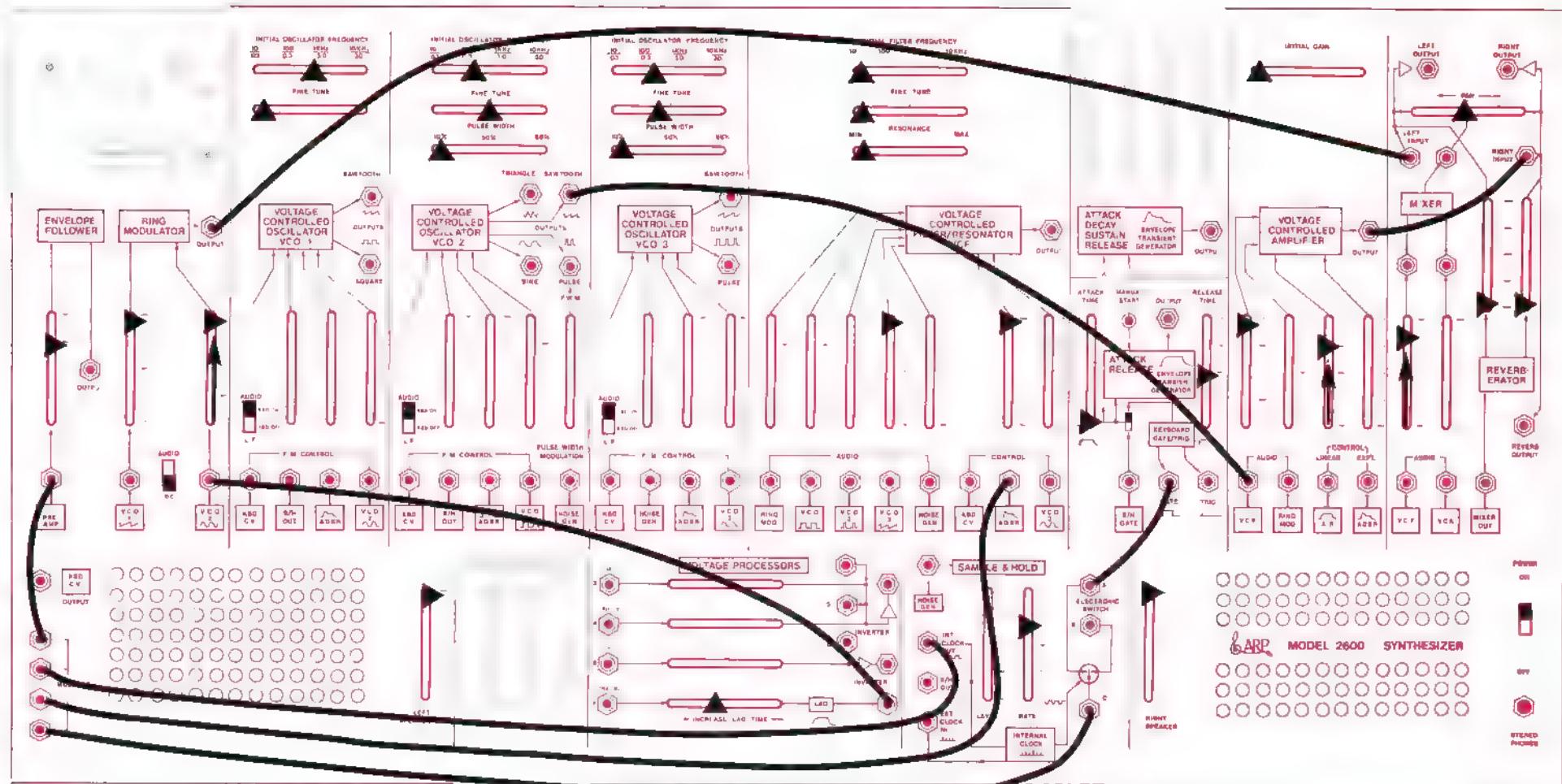
38.



Tune VCO 1 and 2 for different timbres.

Metallic Thunks

39.

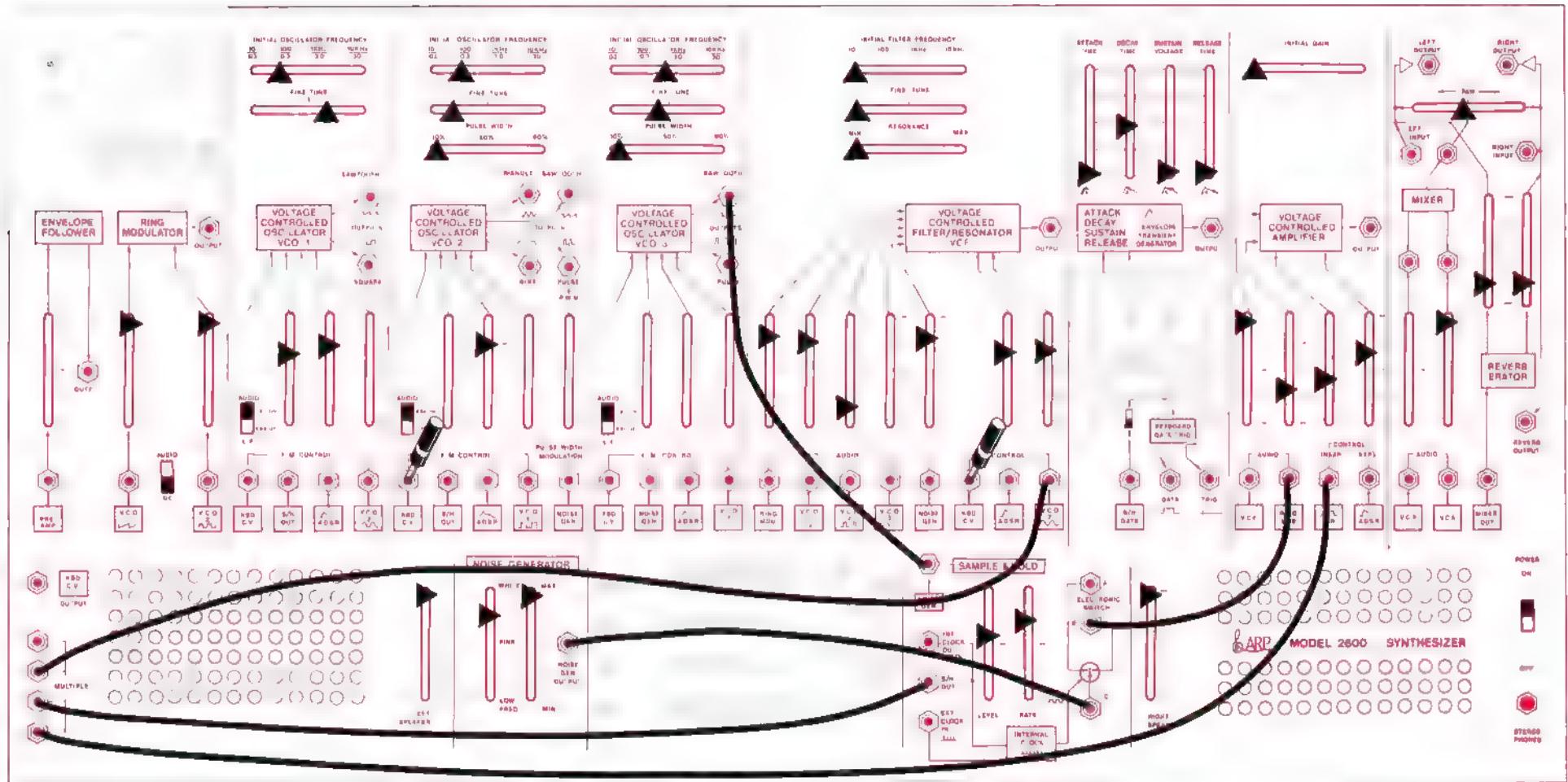


Tune VCO 1, 2, and 3 as desired

3 separate volume controls: | at Ring Mod, AR at VCA, VCF at Mixer.

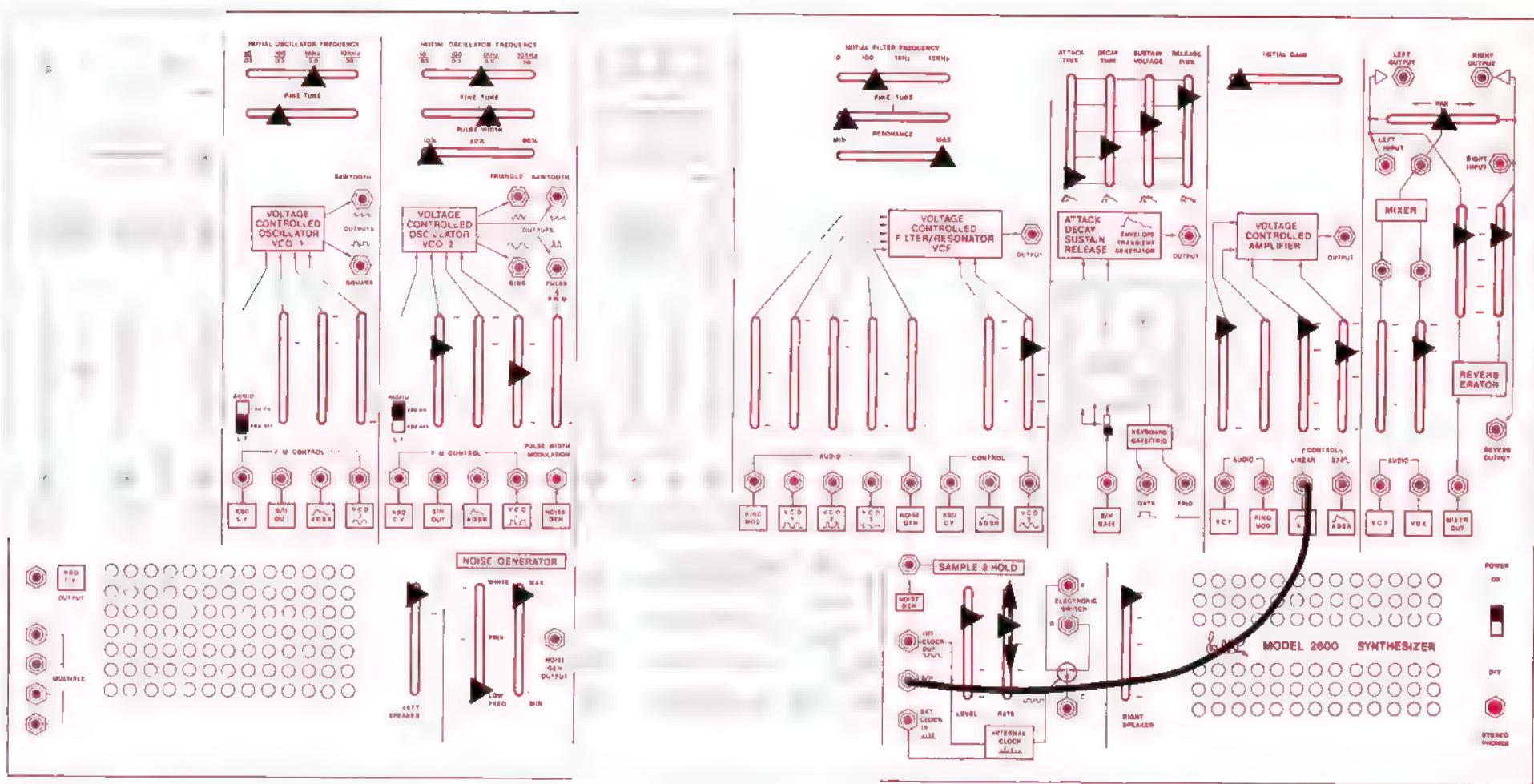
Triple Timings

40.

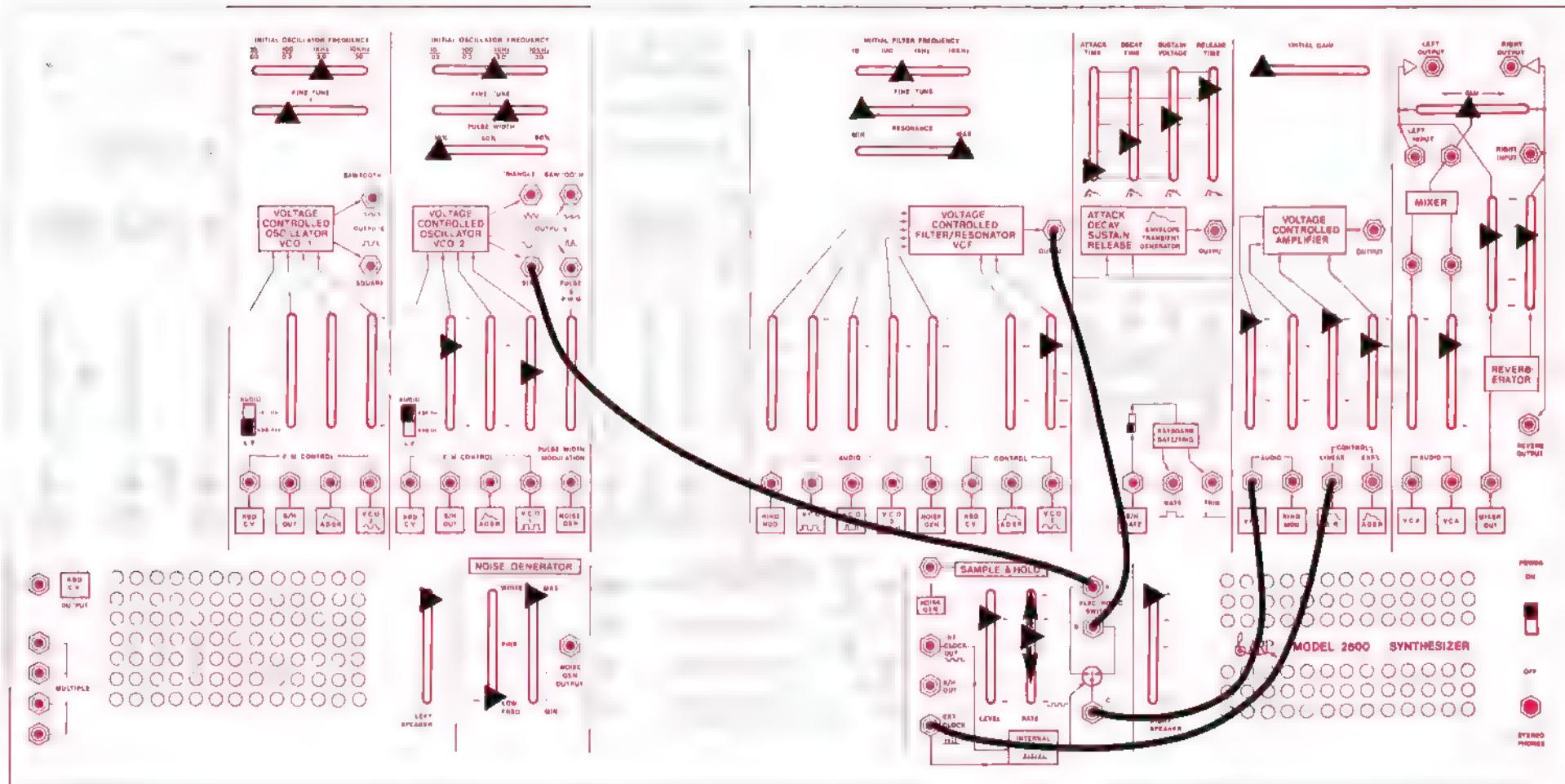


Tom & Hi-hat Duet

41.



Adjust S/H Rate for tempo,
Play up and down keyboard for different metallic effects.

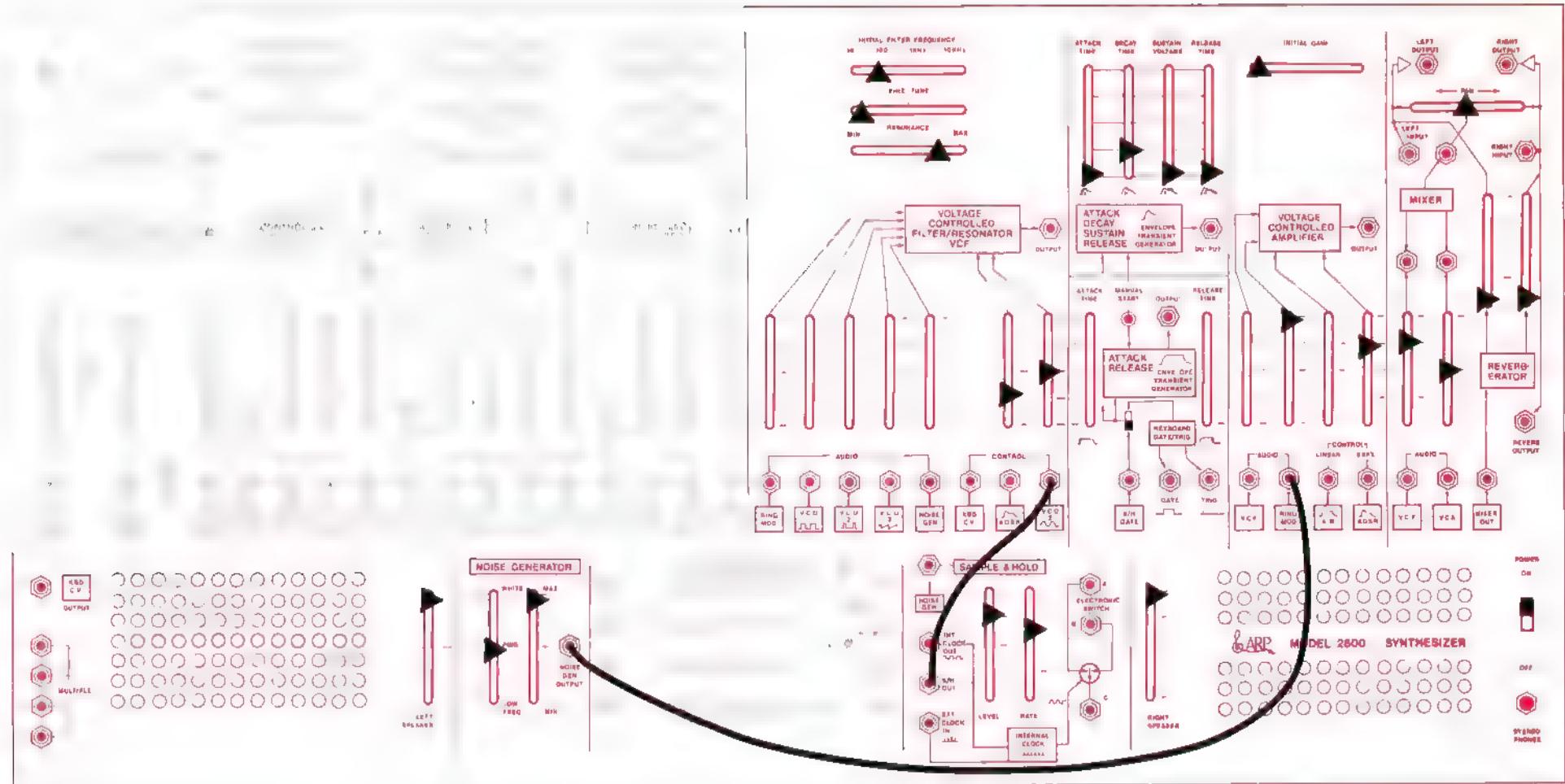


Adjust S/H Rate for tempo.
Play up and down keyboard for different timbres.

4 PATCHCORDS

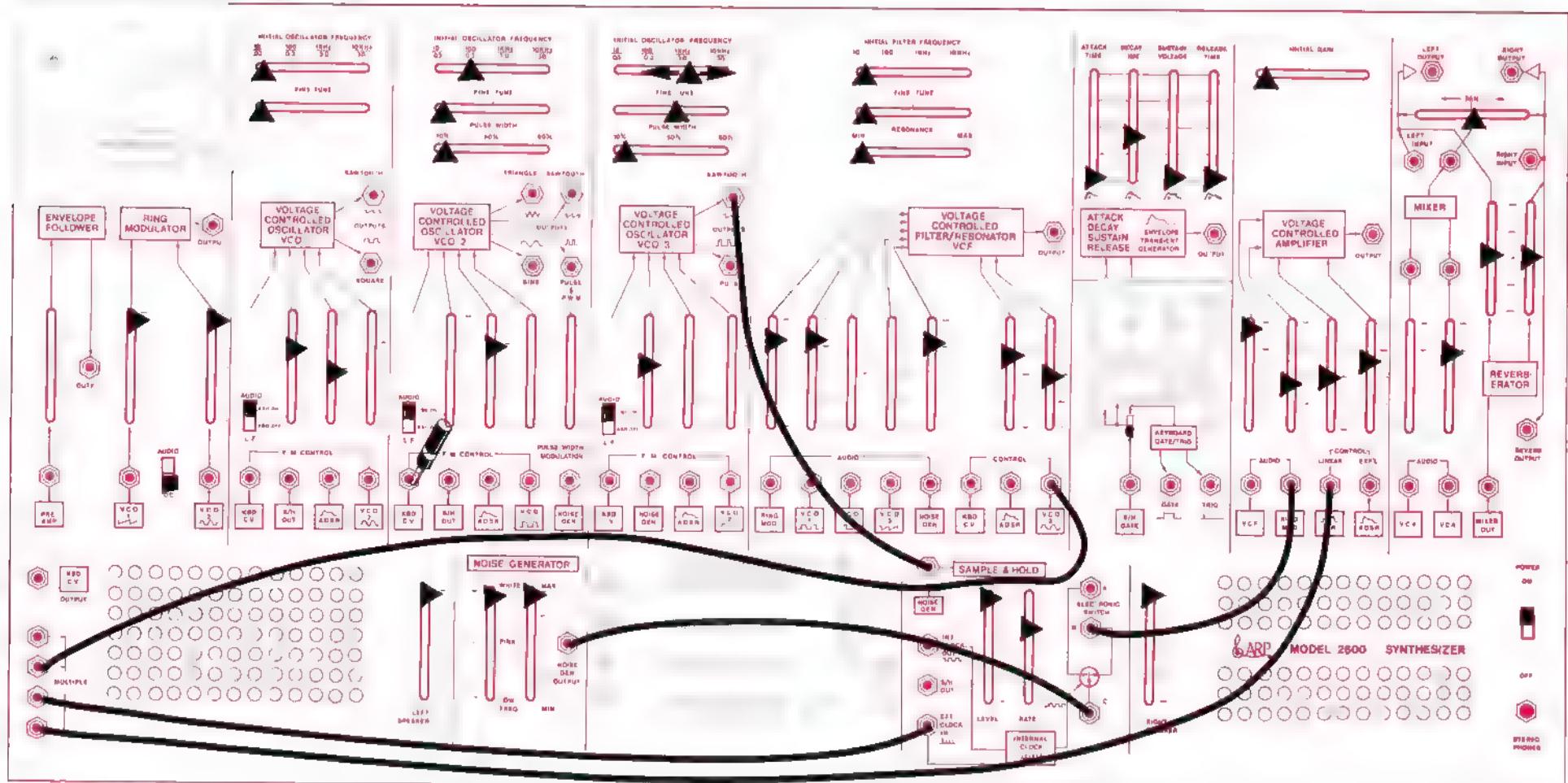
Advanced Steel Drum Corps

43.



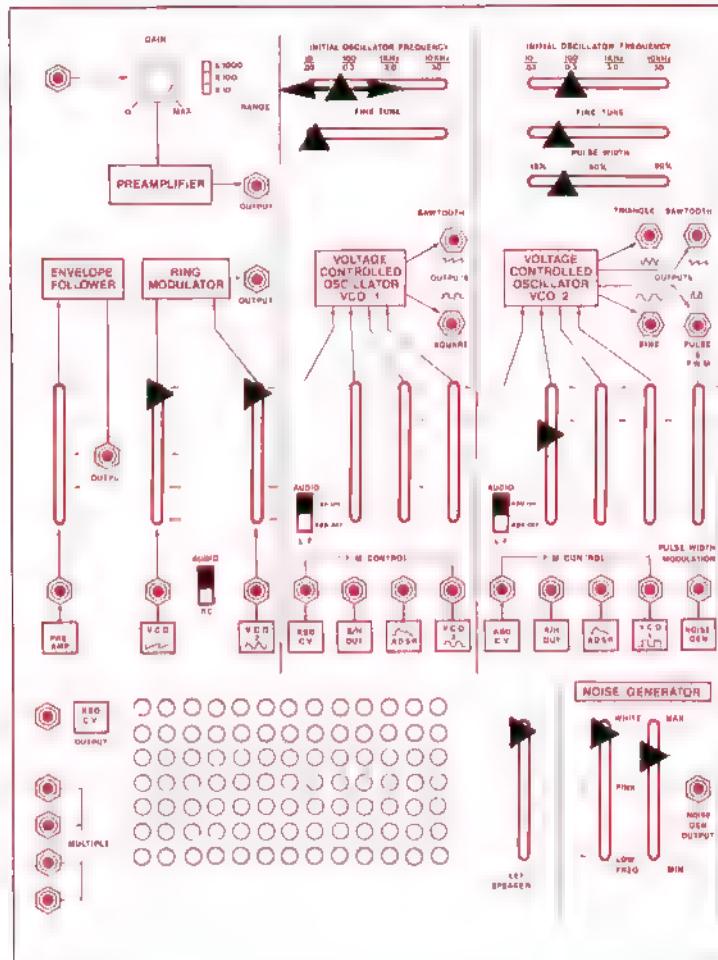
Random ARP Drum Solo

44.



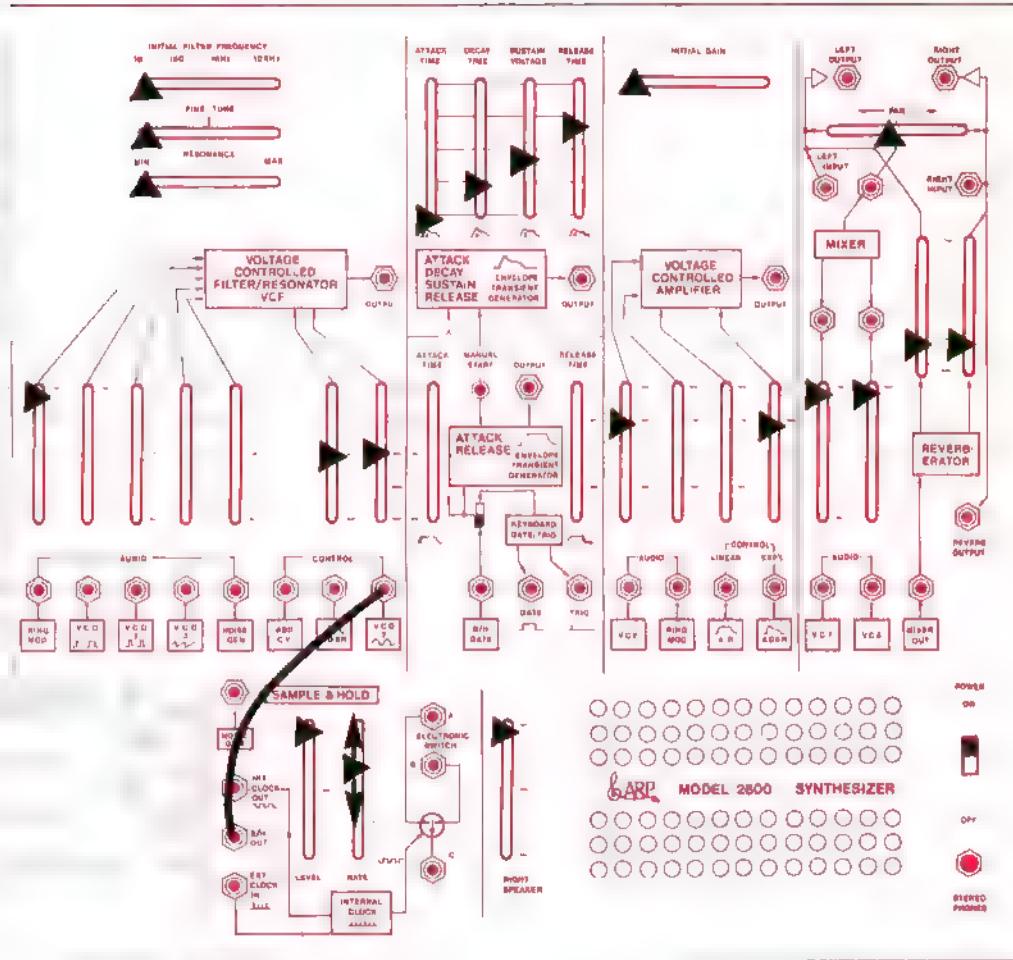
Back-beat: Bass Drum, Hi-hat & Tom

45.

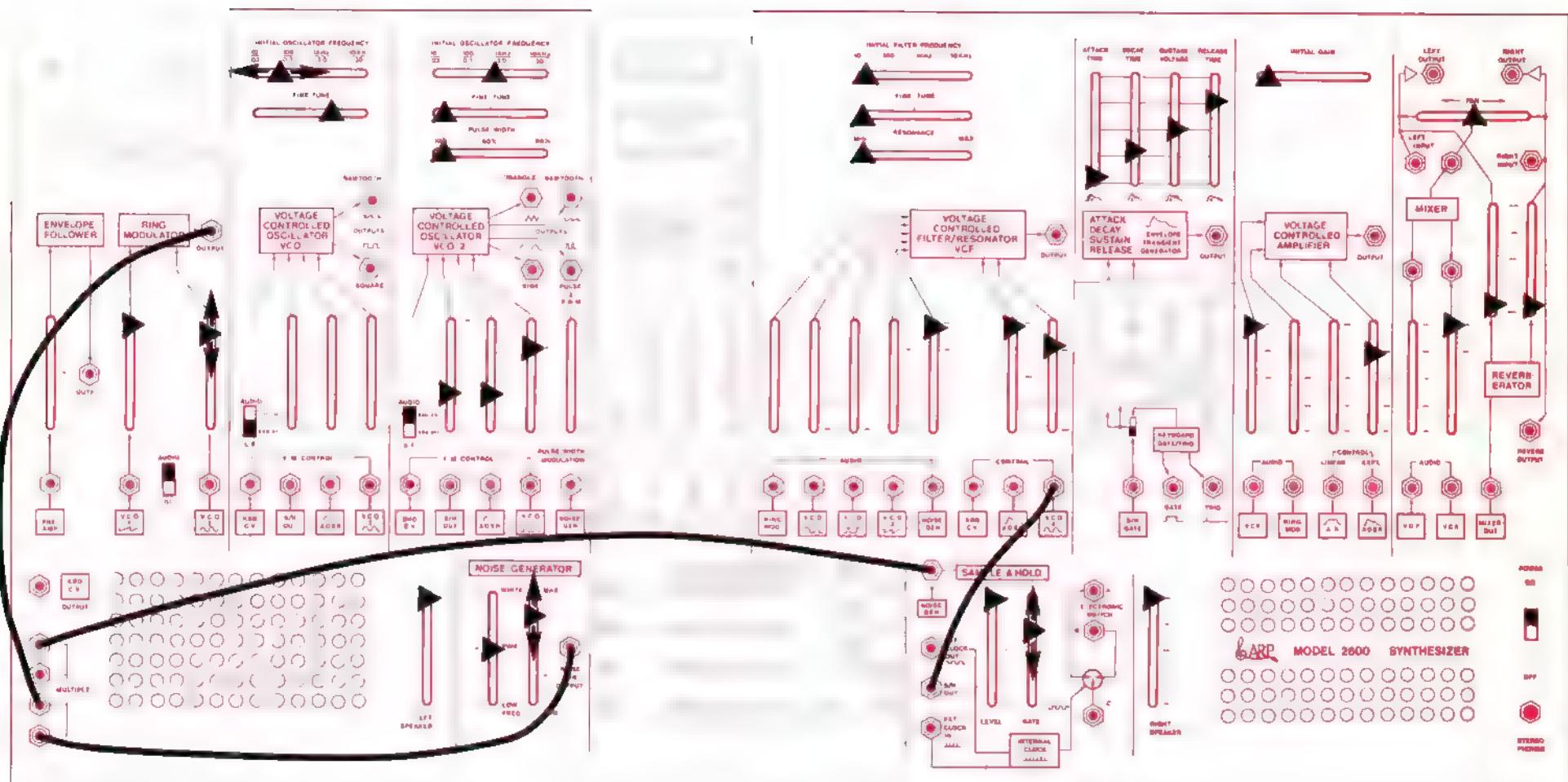


PLAY KEY C2

Cookin' Conga



46.



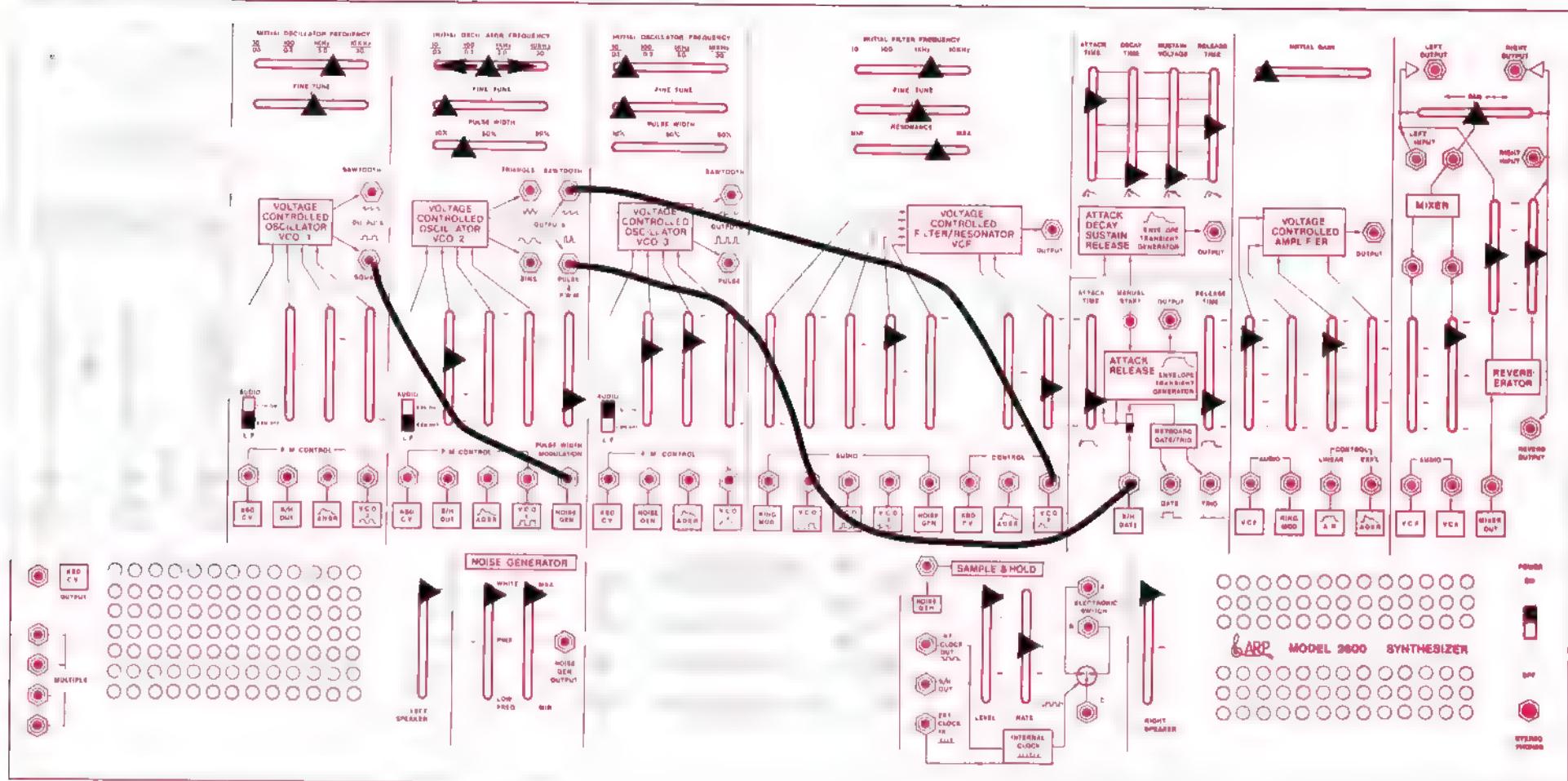
Adjust:
 VCO 1 frequency for 'solo' length.
 VCO 2 \sim ↑ at Ring Mod for Conga volume.
 Noise Max-Min Slider for snare volume.
 S/H Rate for tempo.

PLAY KEY C1

Conga & Snare Duet

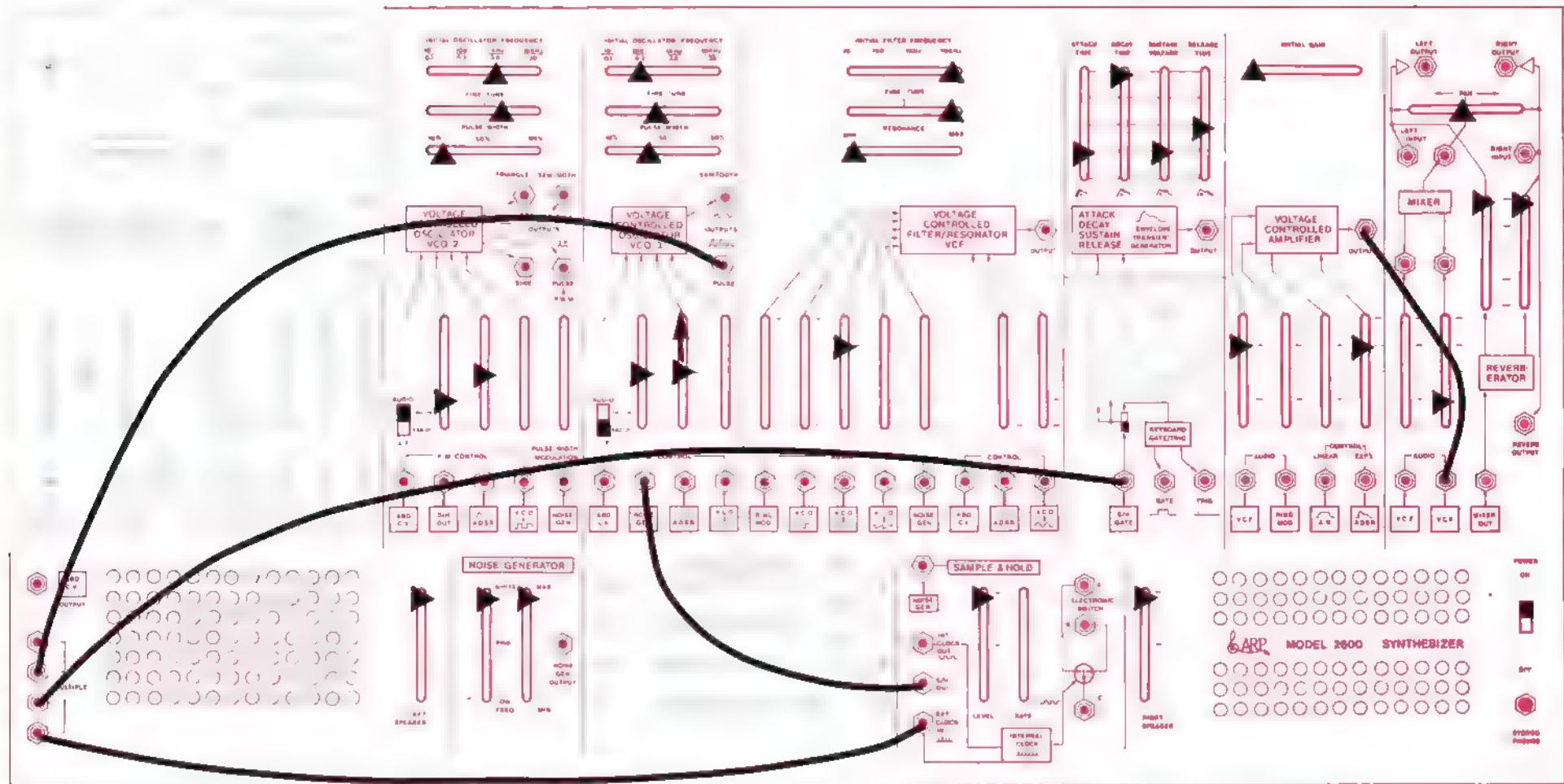
47.

Natural Sounds



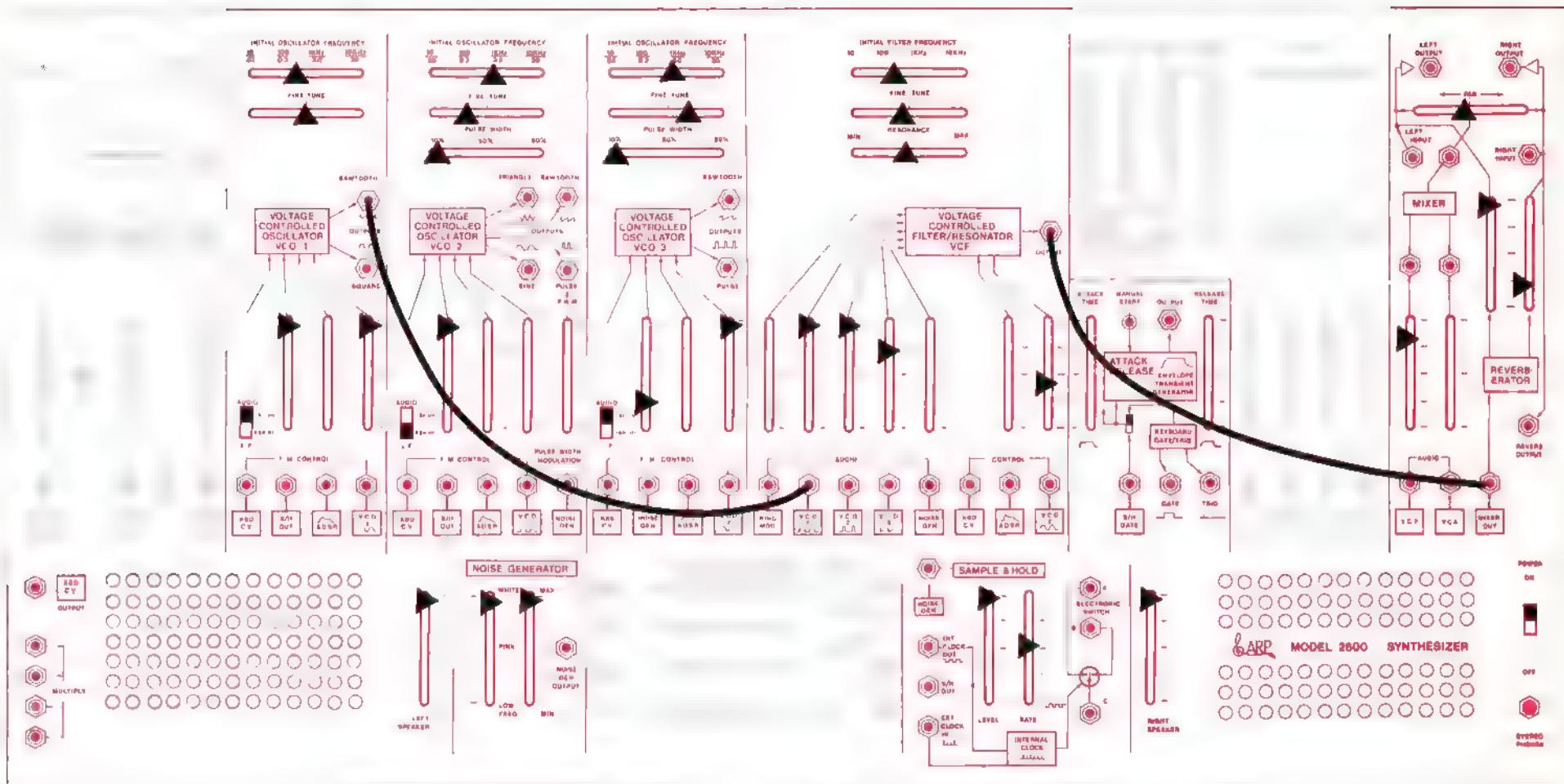
Frog Bog

48.



Johnathan Synthesized Seagull

49.



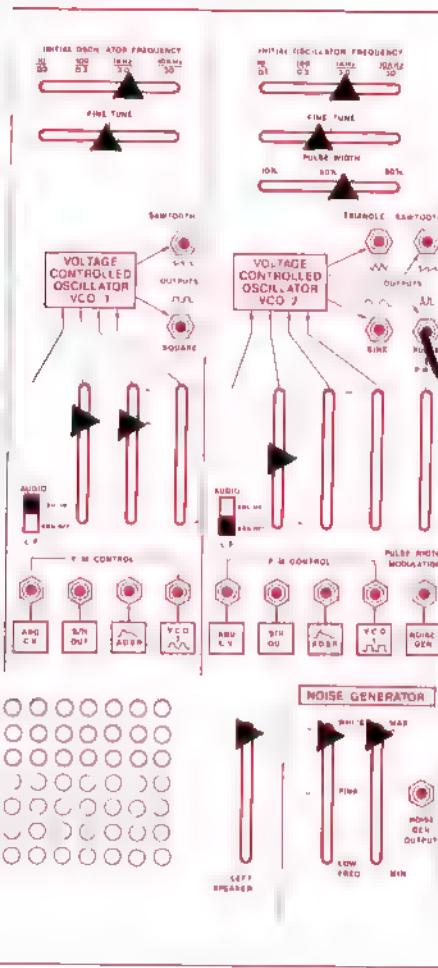
Primeval Forest

50.

VCO TUNING

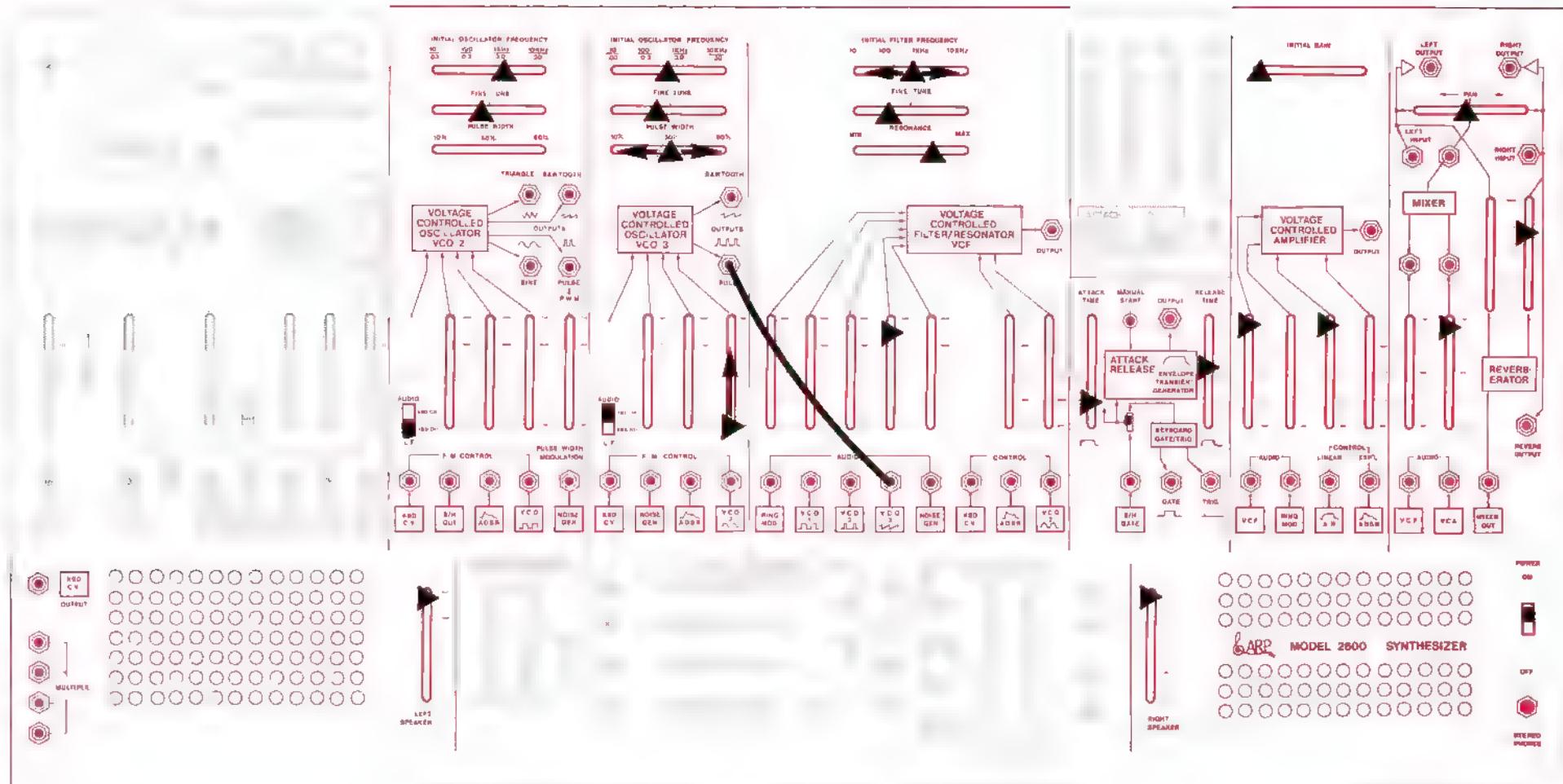
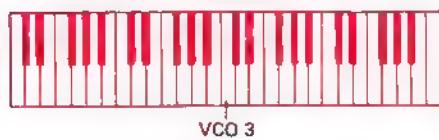


VCO 1



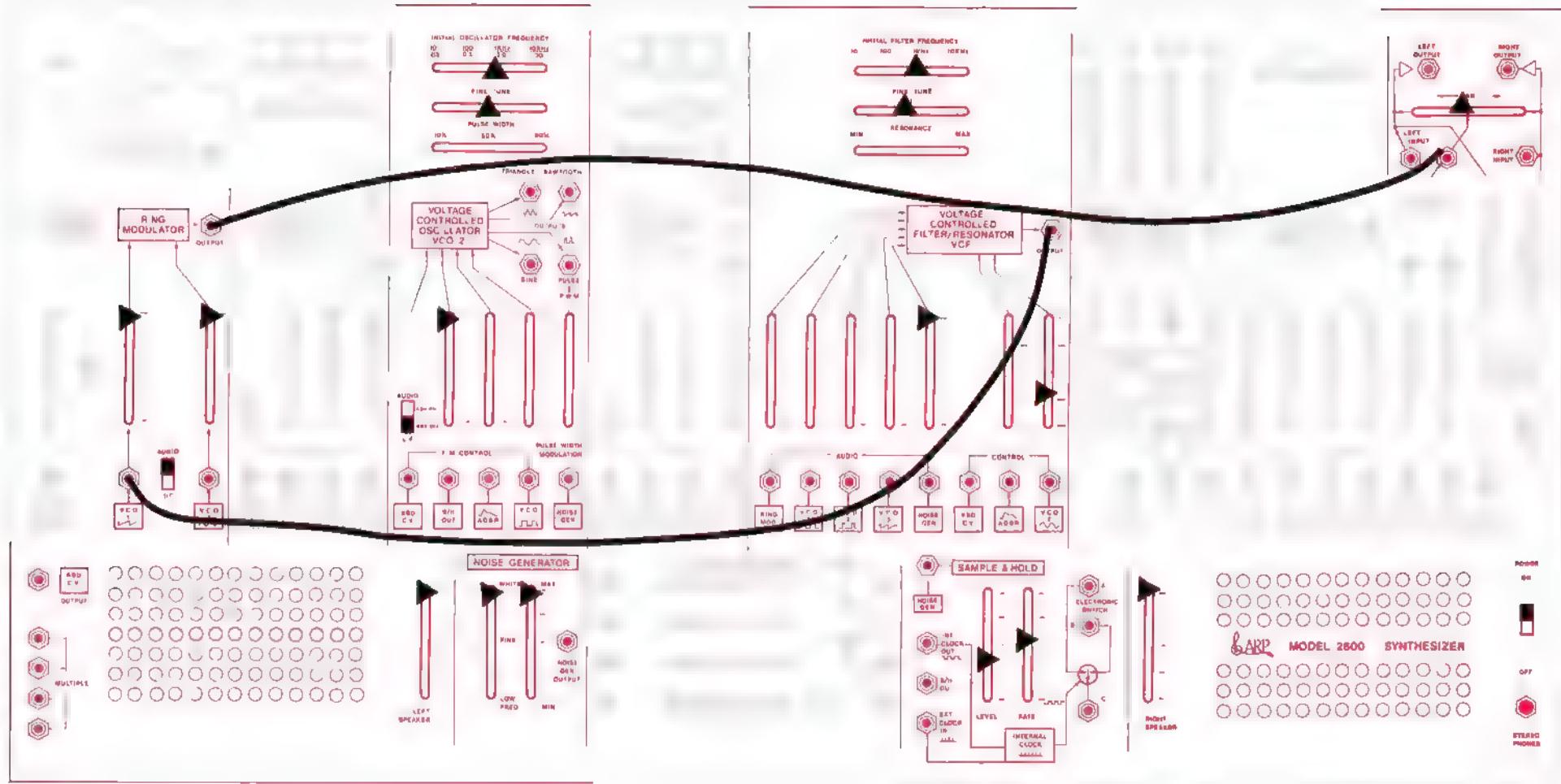
KEYBOARD RANGE TOP 2 OCTAVES

VCO TUNING



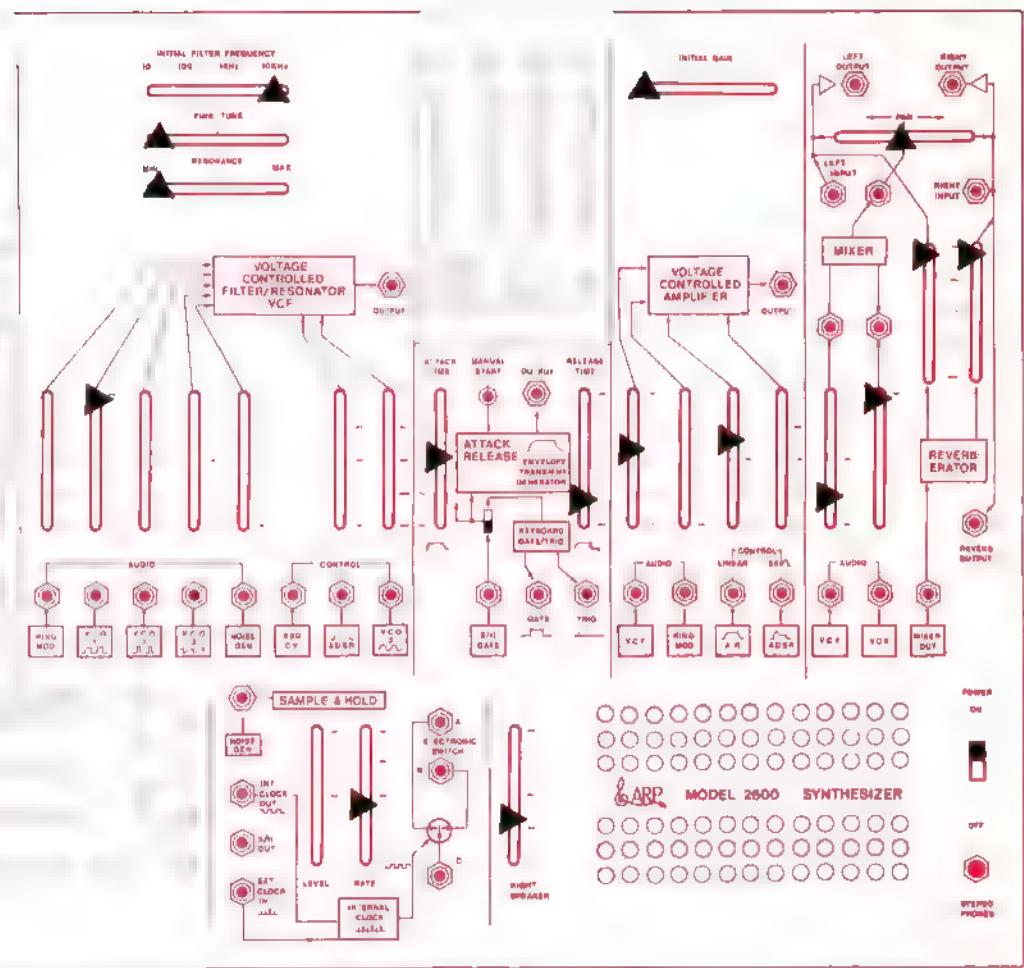
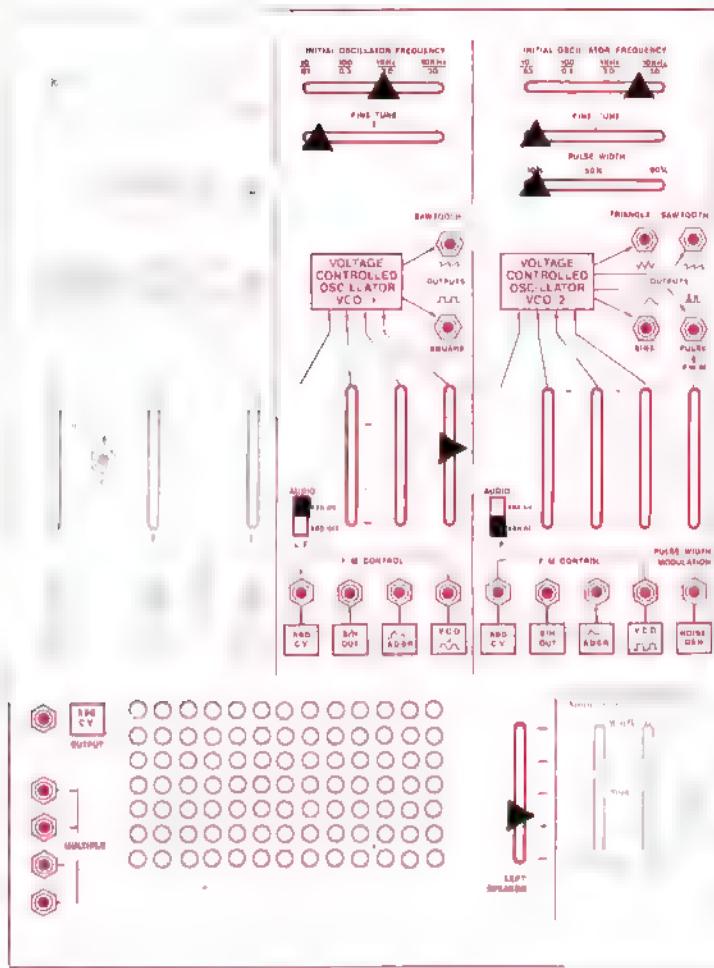
1. Tune VCO 3 to middle C.
2. Raise VCO 2 \approx 1 into VCO 3 and adjust VCO 2 frequency for tremolo speed
3. Adjust VCO 3 Pulse Width and VCF frequency for desired timbre

1 PATCHCORD



Sporadic Heavy Breathing

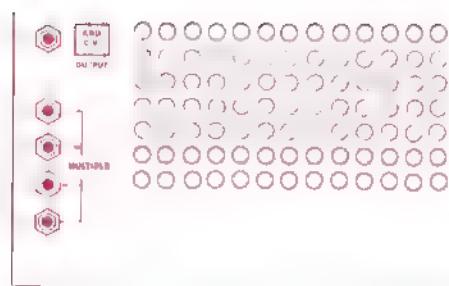
53.



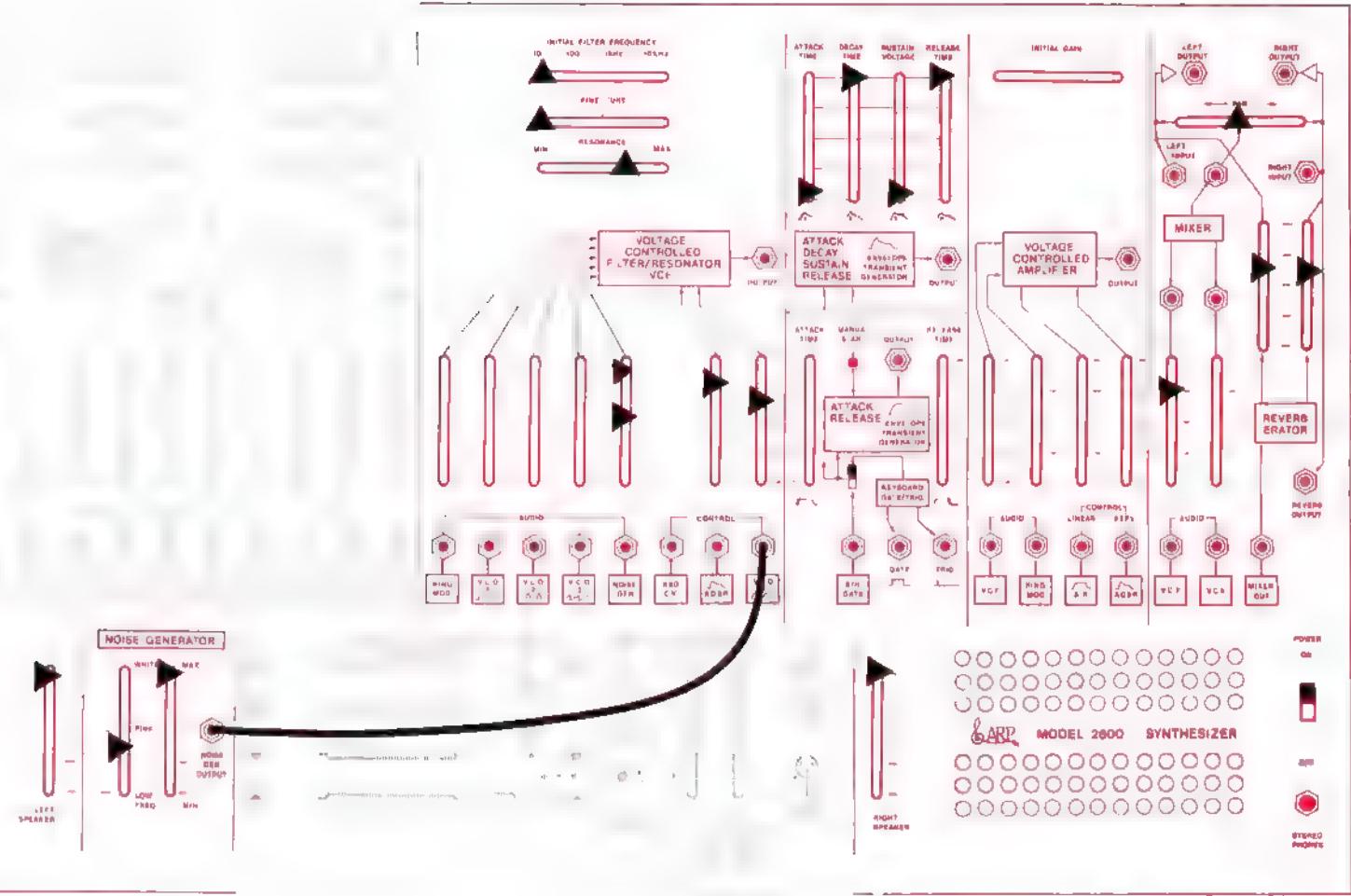
PLAY KEY C5

Cricket Colony

54.

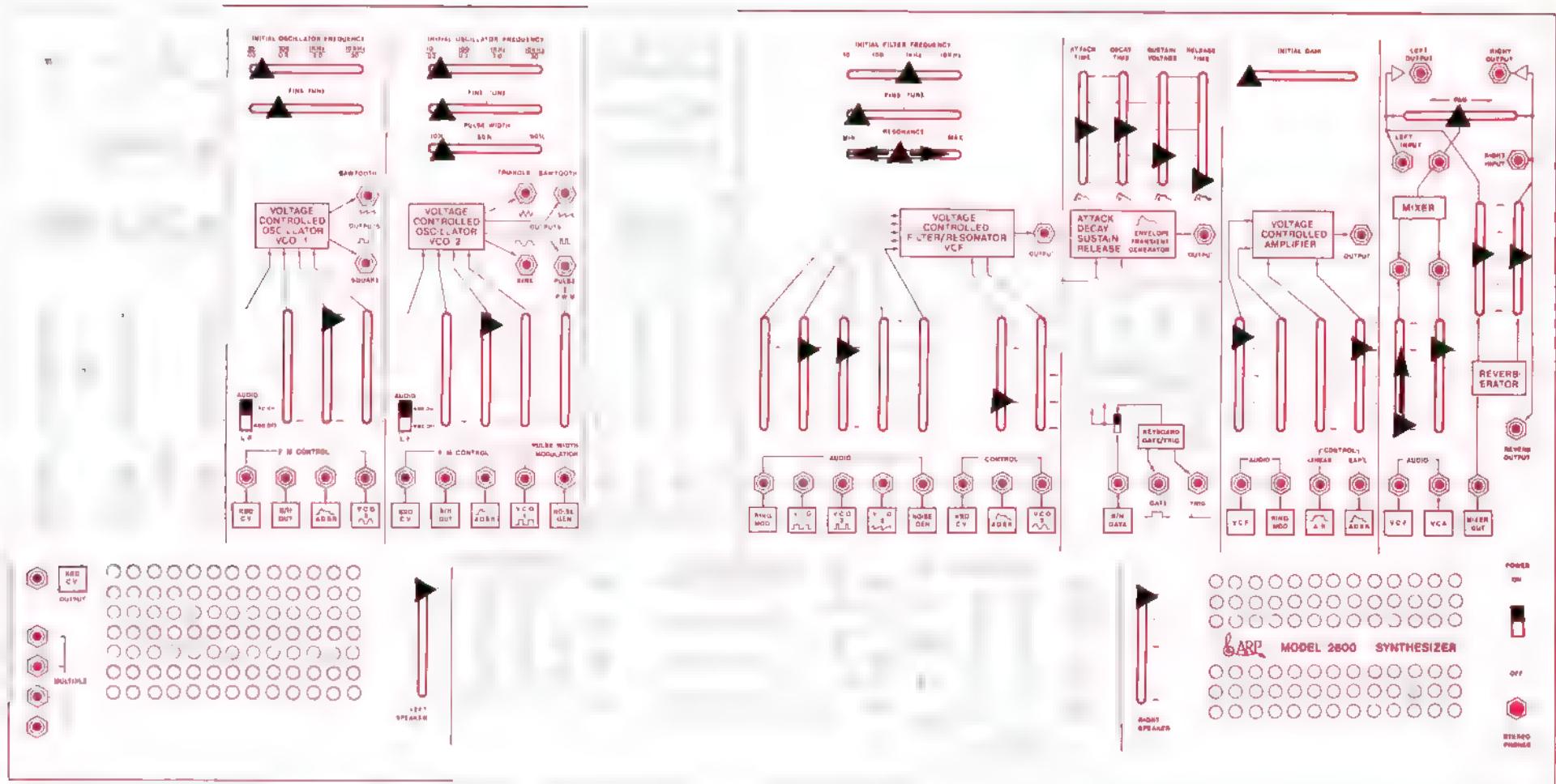


PLAY KEY C6



Clapping Thunder

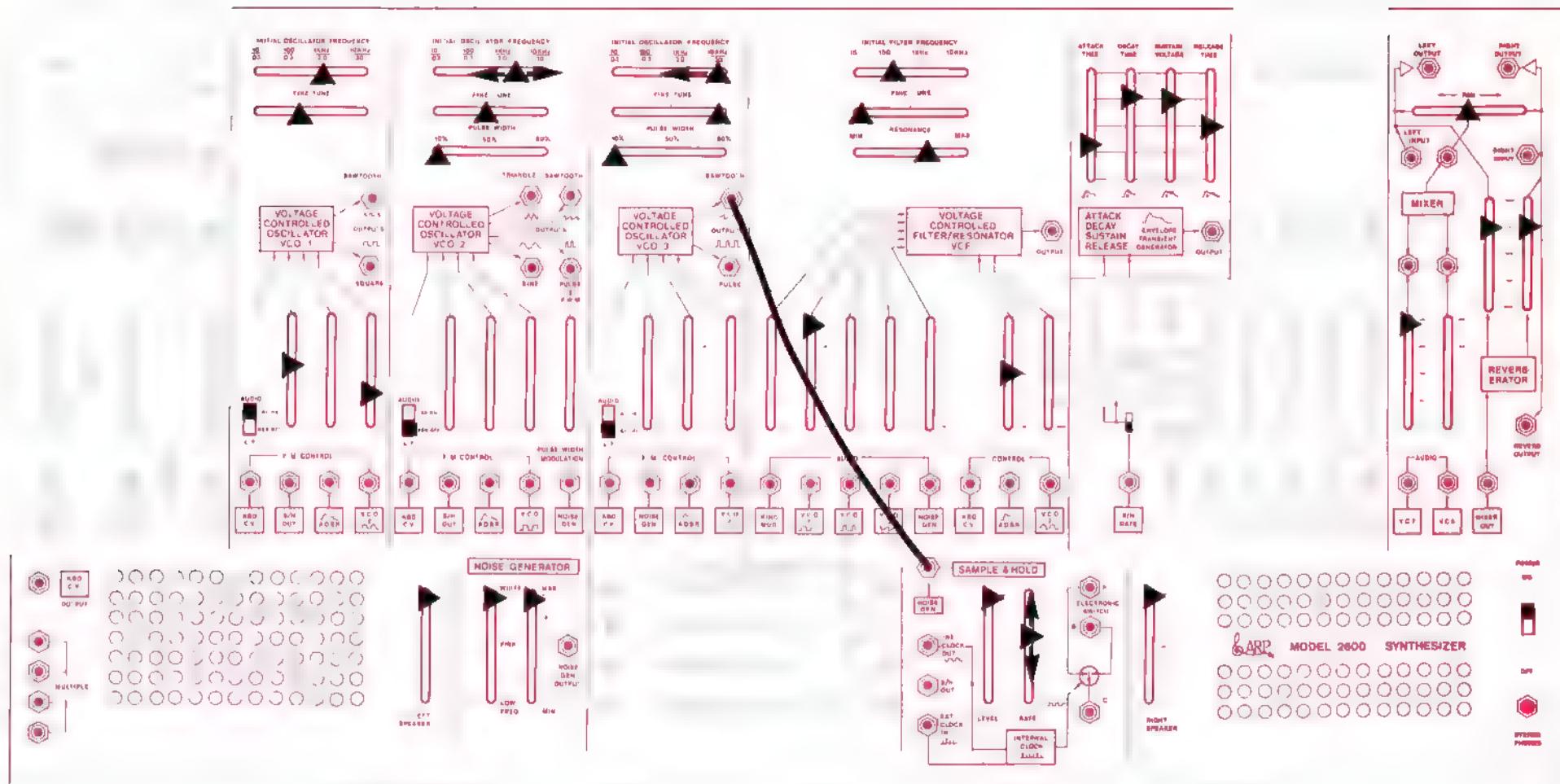
55.



Note: Best barks can be heard around Key C2
Raise VCF into Mixer for growl.

Small Barking Mutt

56.

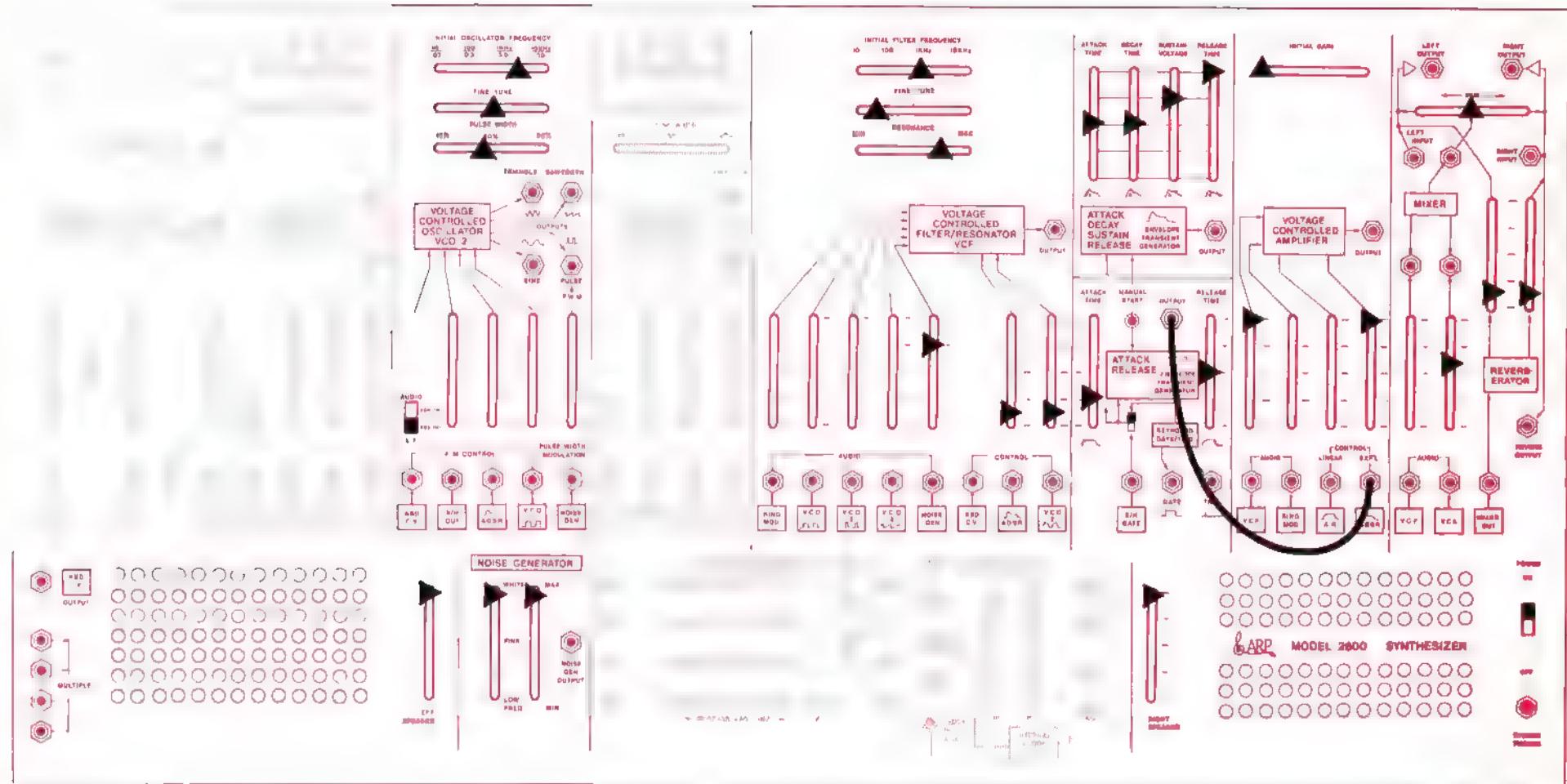


Adjust:
 VCO 3 frequency for patterns
 VCO 2 frequency for vibrato speed
 S/H Rate for whistler speed

PLAY KEY C2

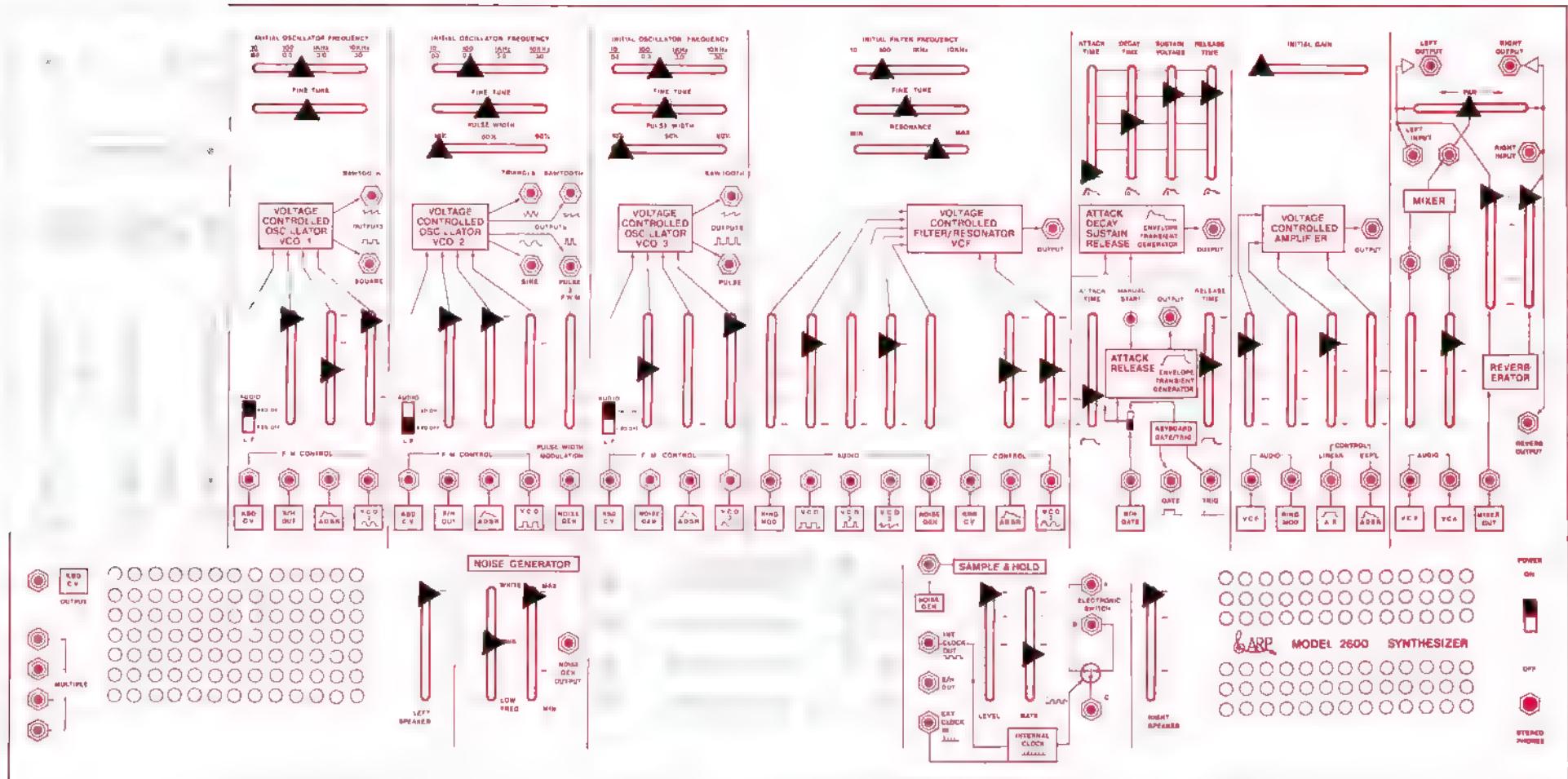
Random Whistler

57.

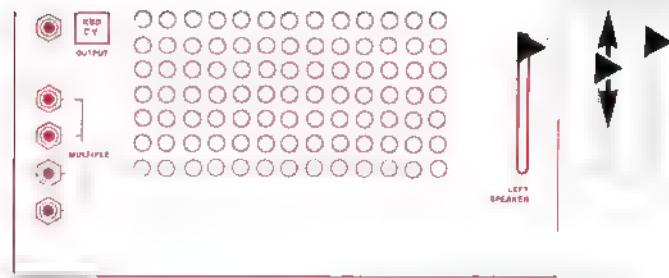


Mother Whistler

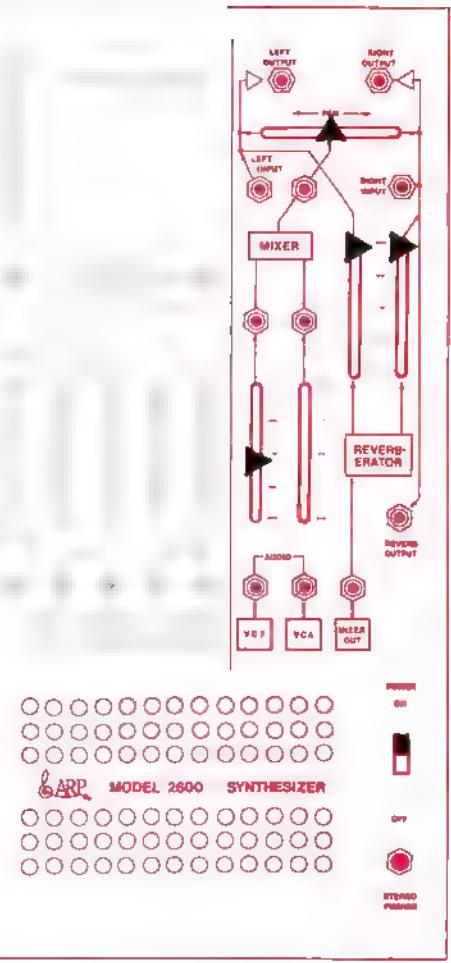
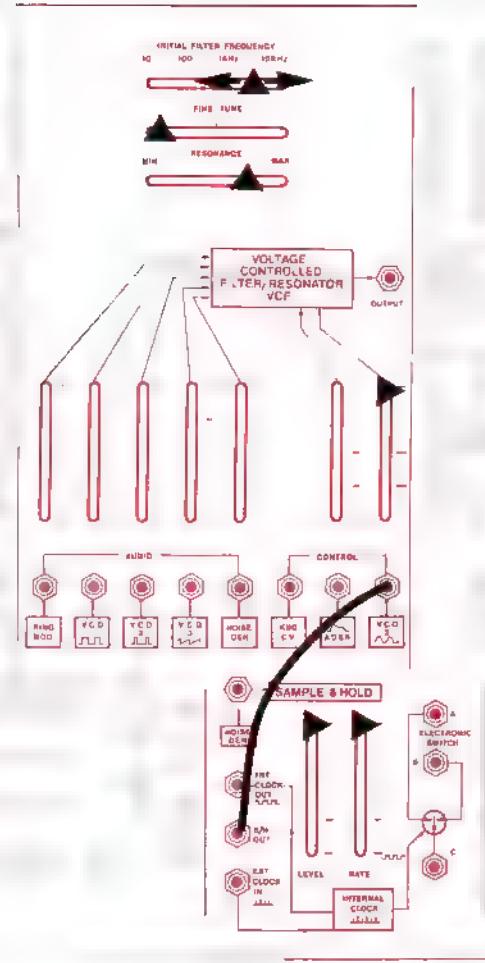
58.



Playing different keys will produce different timbres.



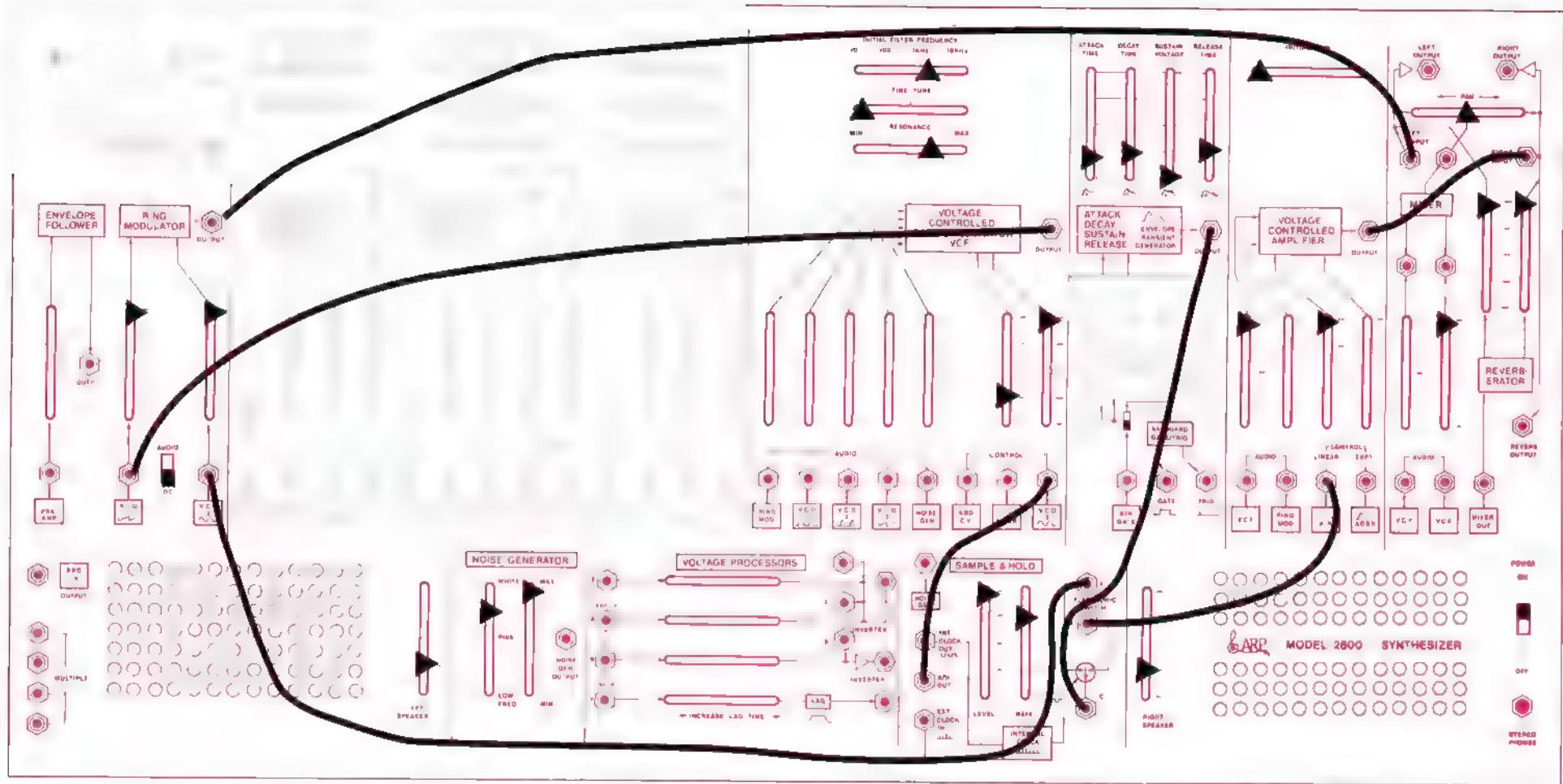
Adjust: VCF frequency and Noise color for desired effect.



1 PATCHCORD

Water Drops

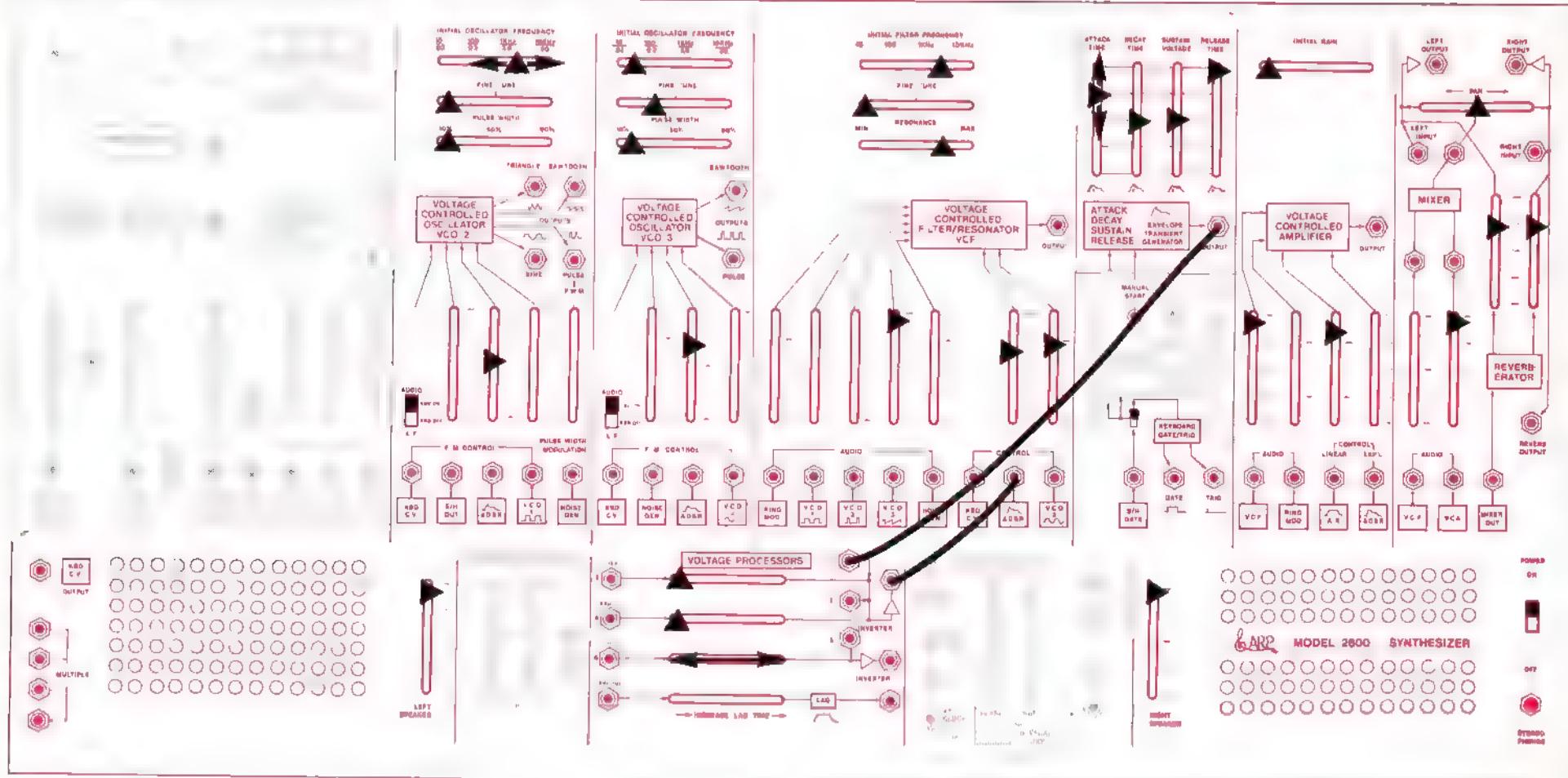
60.



Stereo Chickadee Conversation

61.

KEYBOARD RANGE: BOTTOM 2 OCTAVES OR MANUAL START



Adjust:
 ADSR into VCF.
 VCO 2 ~| into VCF for 'voice-like' texture.
 VCO 2 frequency for different vowels.
 Resonance
 Attack time on ADSR

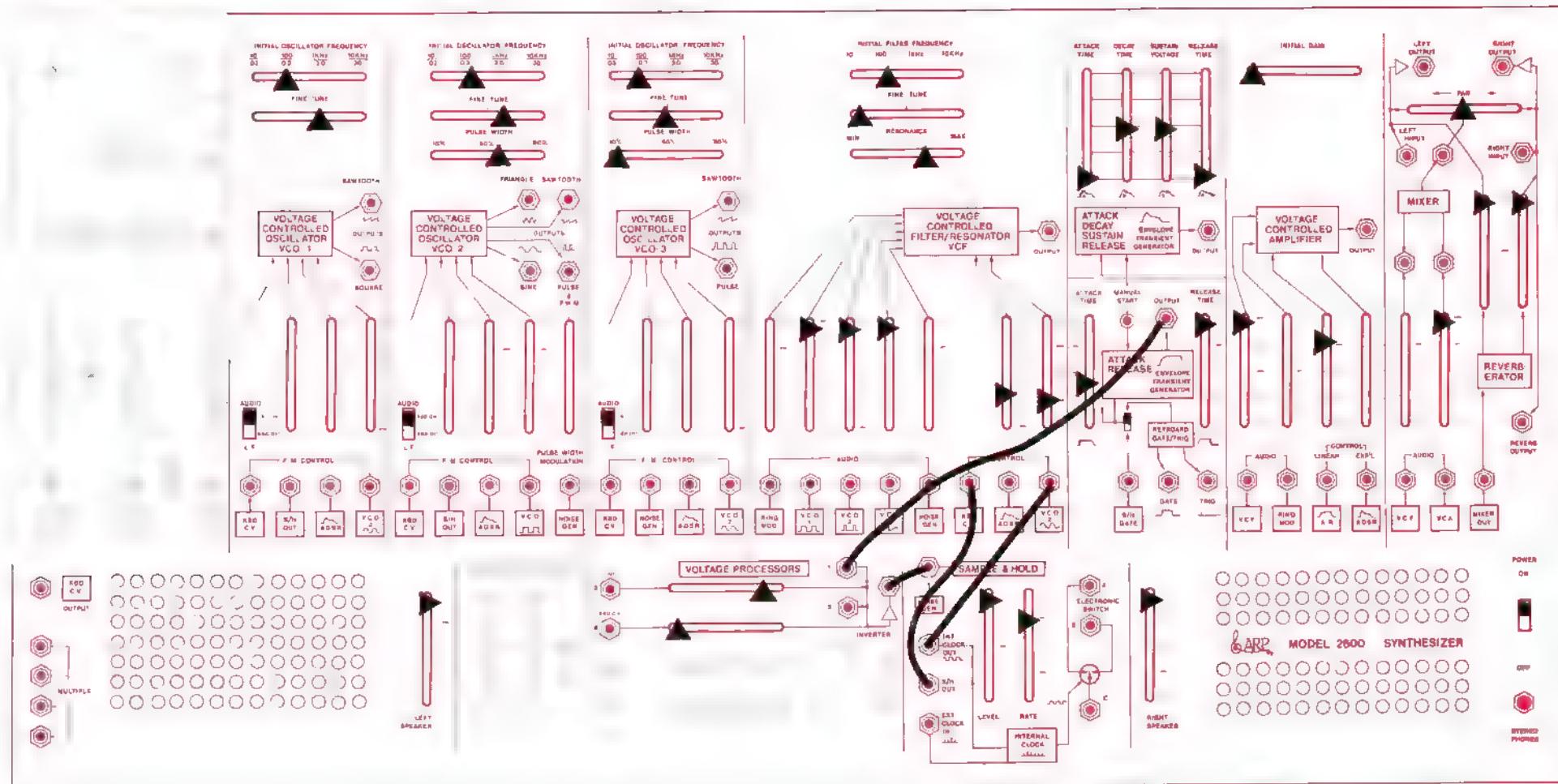
2 PATCHCORDS

"Oh Yeah!"

62.

Arpeggios, Chords & Sequences

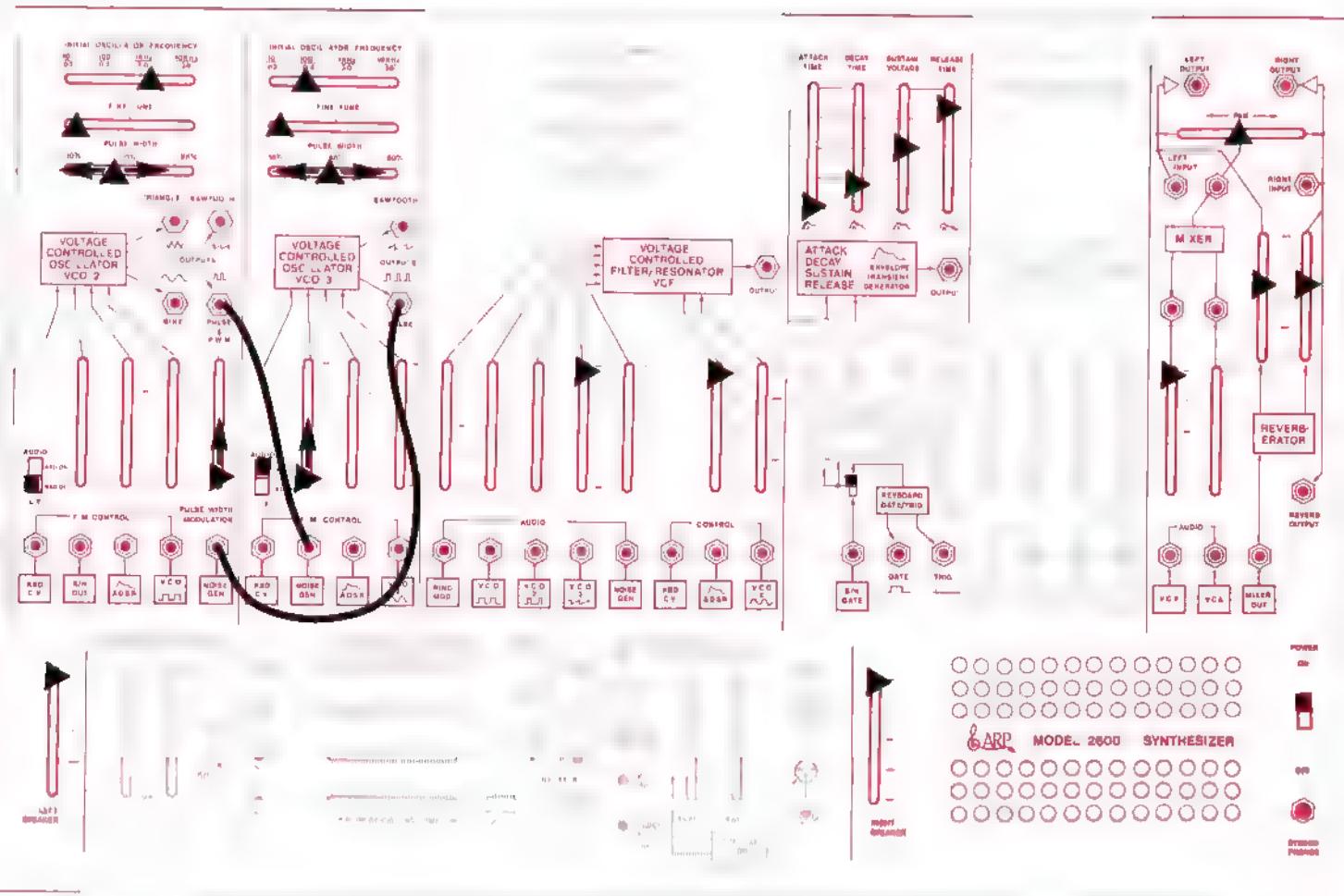
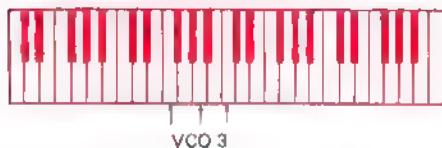
VCO TUNING



Inverted ADSR Harmonic Arpeggio

63.

VCO TUNING

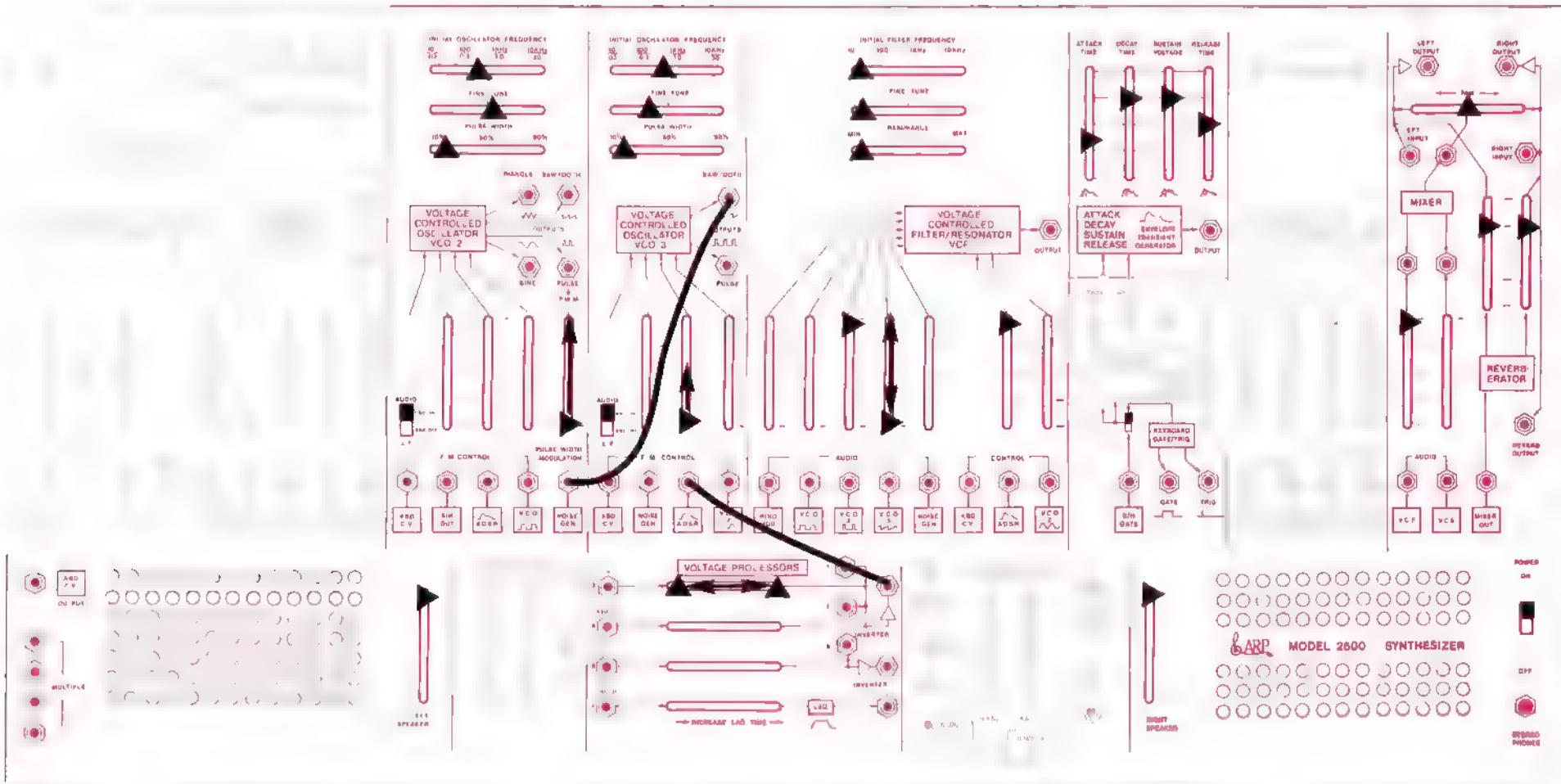


1. Raise into VCO 3, tuning interval to a fifth.
2. Raise into VCO 2 for appearance of middle pitch.
3. Adjust VCO 2 Pulse Width for desired rhythm.
4. Tune middle note to a major third above bottom pitch with VCO 3 Pulse Width slider

2 PATCHCORDS

Three-note Tunable Sequence

64.



TONIC CHORD (I)

1. Tune VCO 2 to middle C.
2. Raise VCO 3 ↑ into VCF and tune to a minor 6th above VCO 2 (C-A).
3. Close VCO 3 ↘ and raise Pulse Width Mod slider fully into VCO 2.

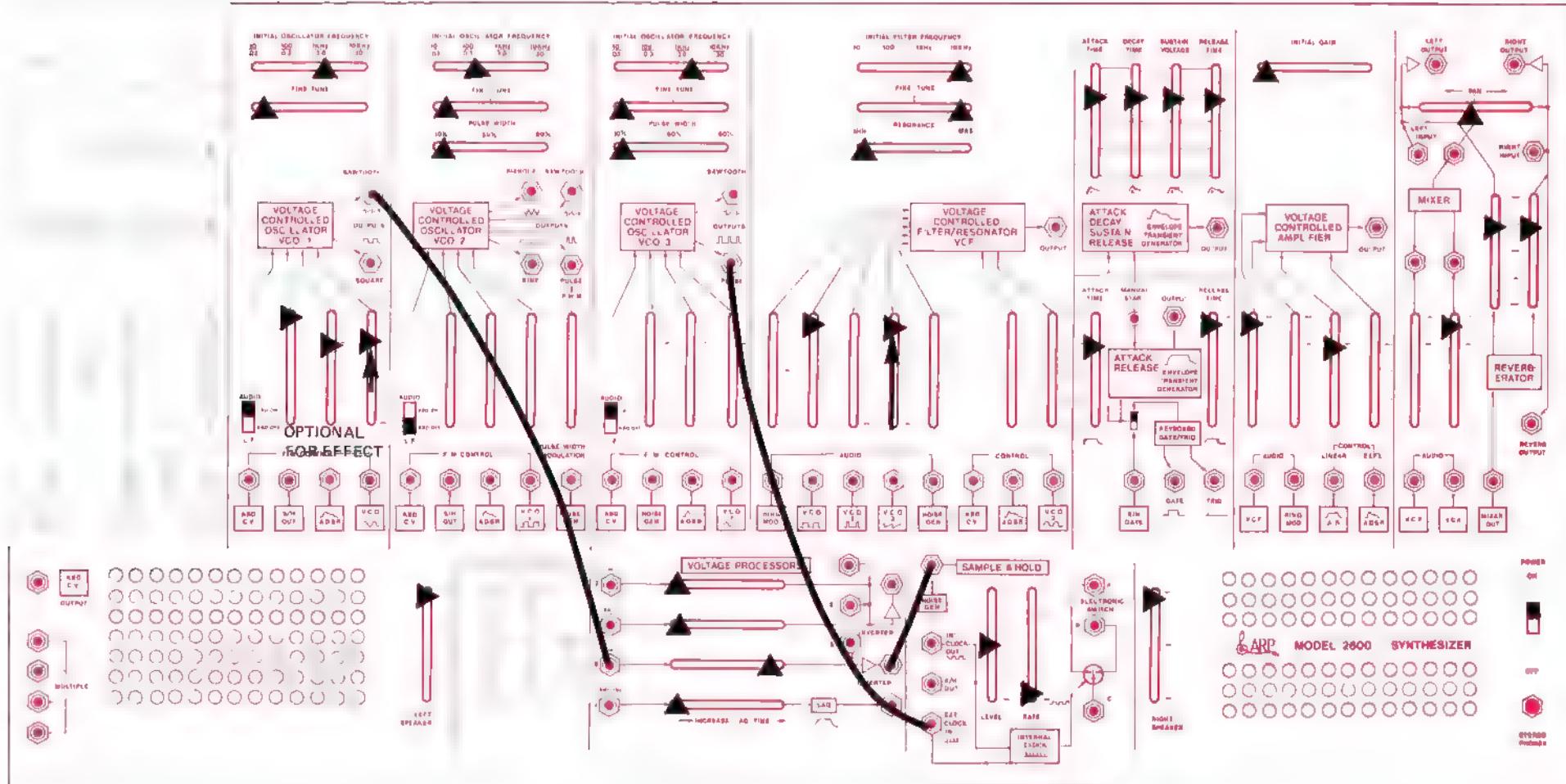
SUBDOMINANT CHORD (IV):

4. Move Inverter slider fully to the right.
5. Raise ↑ into VCO 3 until a new chord is heard.
6. Moving Inverter slider back and forth produces either I or IV chord

2 PATCHCORDS

Three-note Chord from Two VCOs

65.



Be certain that the frequency of VCO 3 is above that of VCO 1.

3 PATCHCORDS

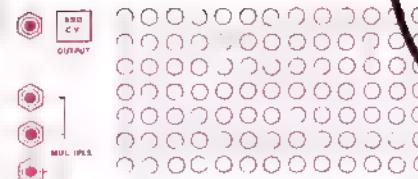
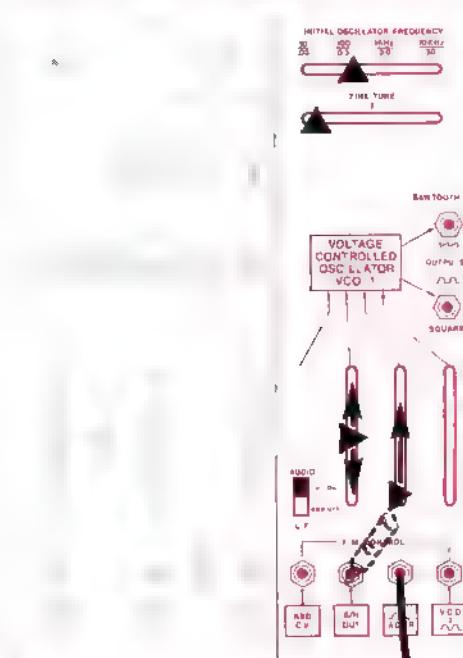
Inharmonic Sequencing

66.

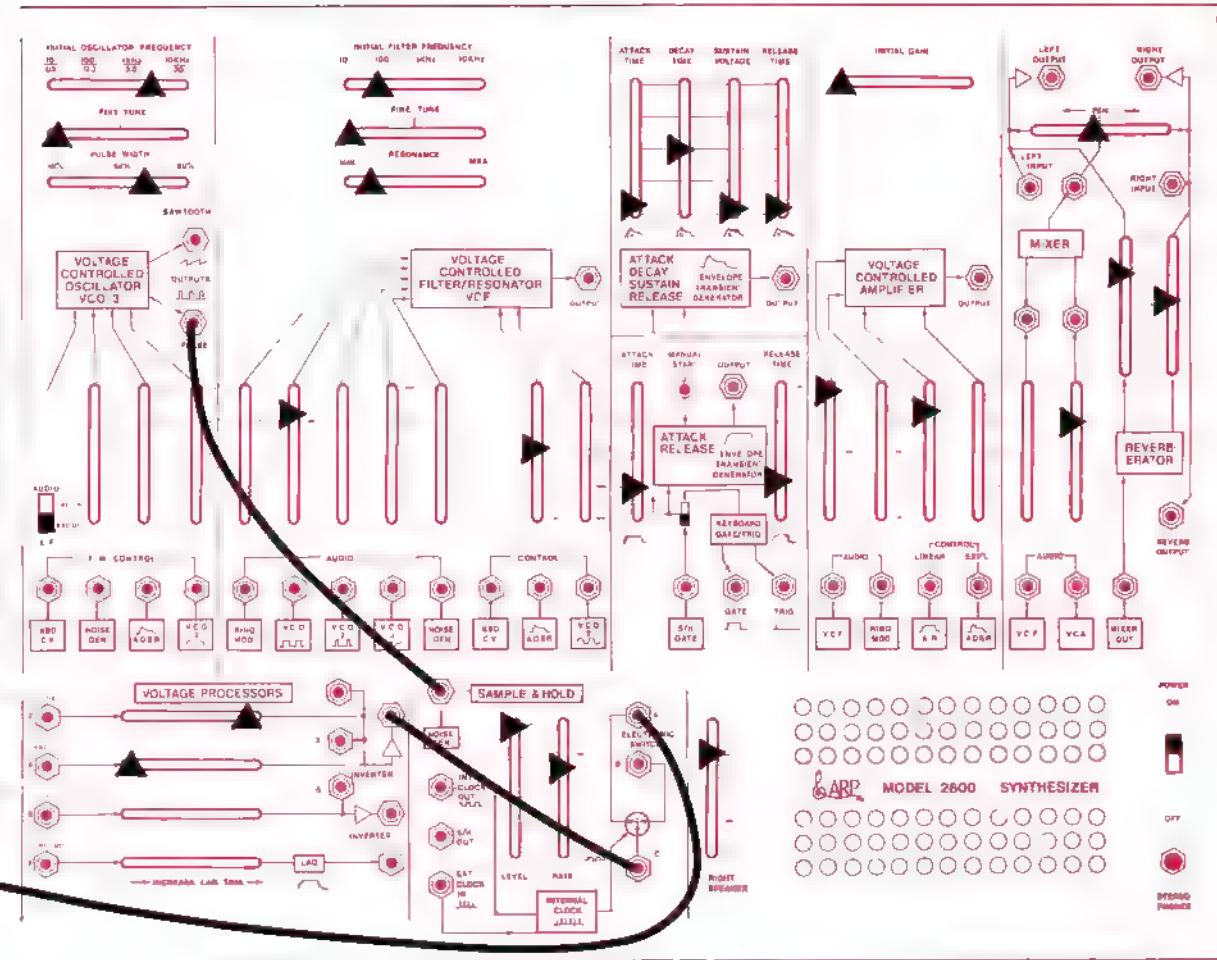


VCO 1 with
dummy plug

without
dummy plug



117 SPEAKER



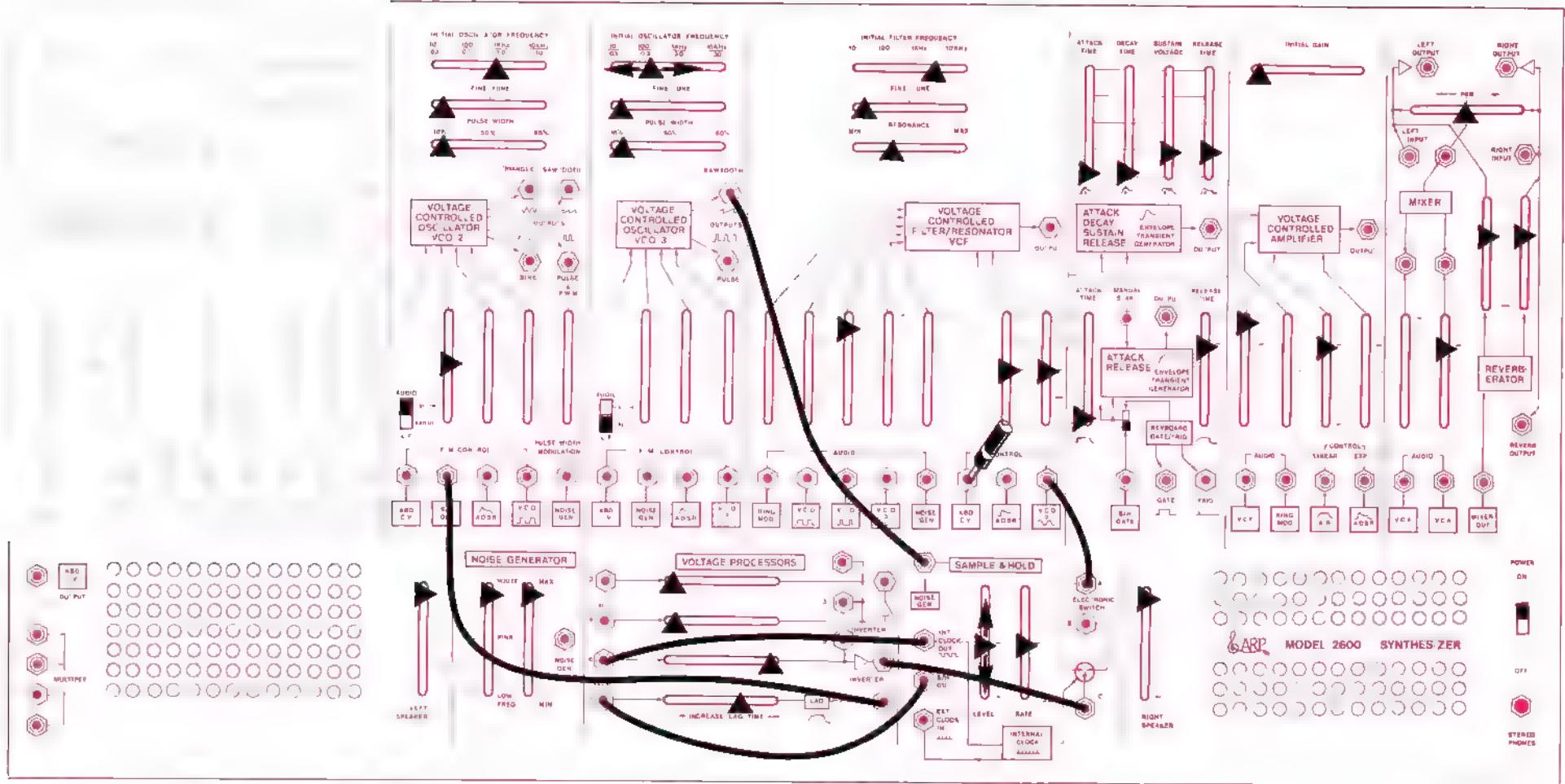
Tuning:

1. Tune S/H into VCO 1 to an octave interval.
2. Insert dummy plug into S/H jack at VCO 1 and raise Δ , tuning to a fifth.
3. Remove dummy plug.

3 PATCHCORDS

**Random Select:
Four-note Tunable Arpeggio**

67.



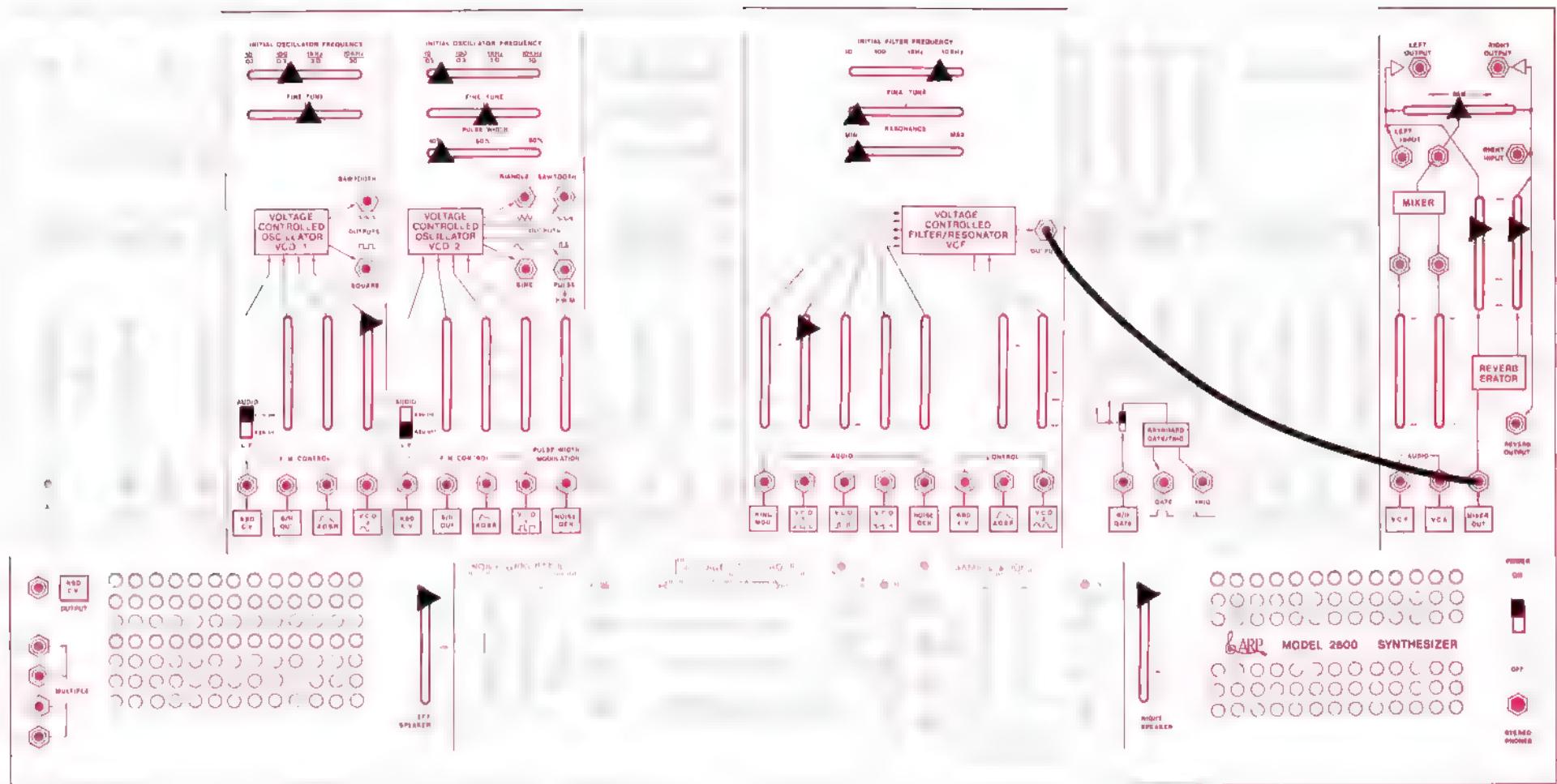
Tune: VCO 3 for desired pattern.
S/H level for desired interval

6 PATCHCORDS
1 DUMMY PLUG

Gliding Intervals

68

Sound Effects

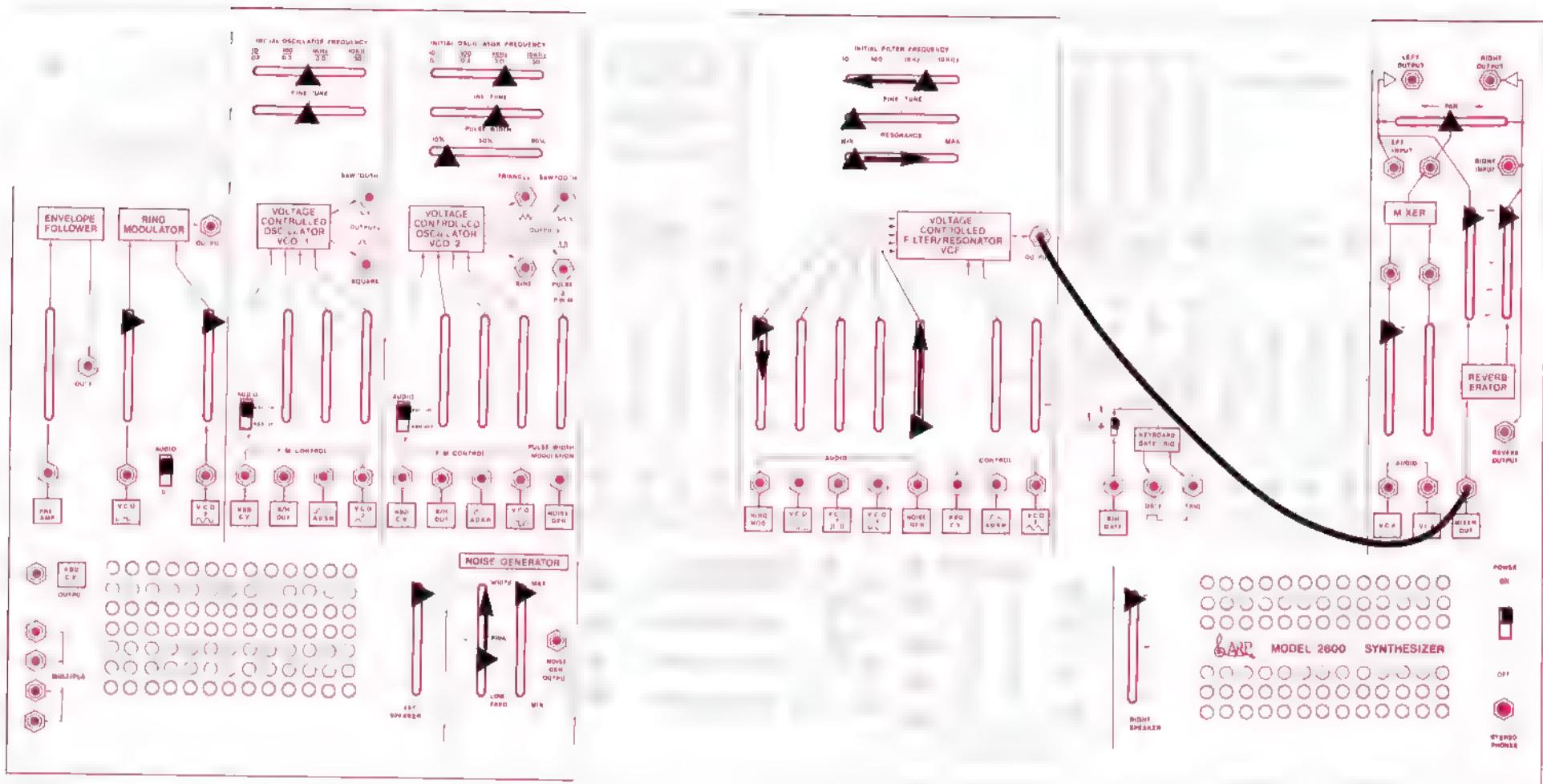


Switch VCO 2 Keyboard Switch on and off for horn blast.

PLAY KEY G3

Firetruck Siren with Horn Blast

69.



Portamento

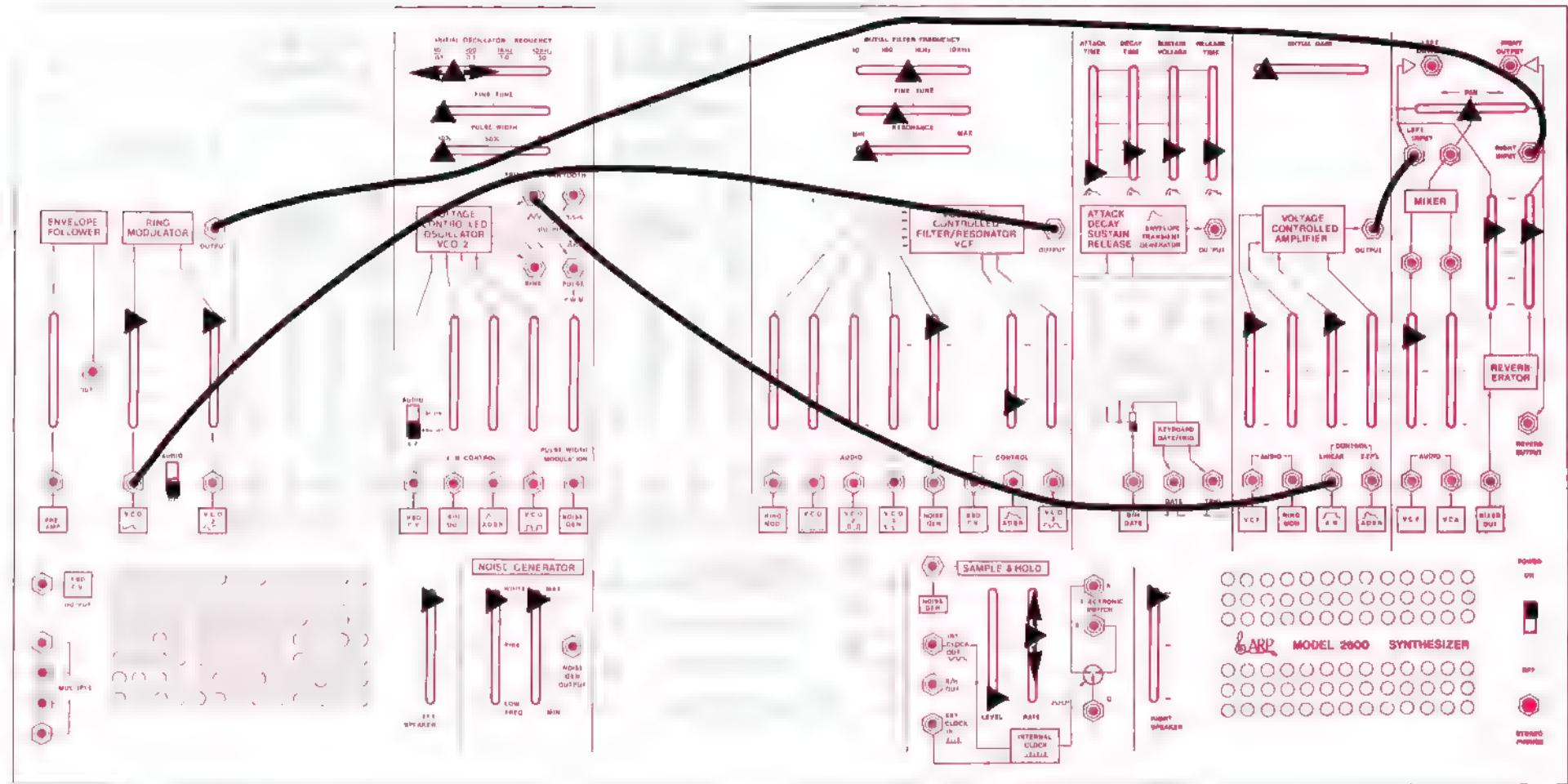


Procedure:

1. Play Key C1, glide to C5.
2. Raise Noise into VCF.
3. Lower Ring Mod at VCF as shown.
4. Raise Noise color Pink to White
5. Simultaneously, move VCF frequency to left and move Resonance to right.

1 PATCHCORD

727 Starting Up, Taxiing & Taking Off 70.



Adjust: VCO 2 frequency for pan speed.
S/H Rate for train 'chugga' speed.

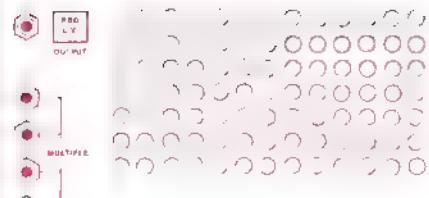
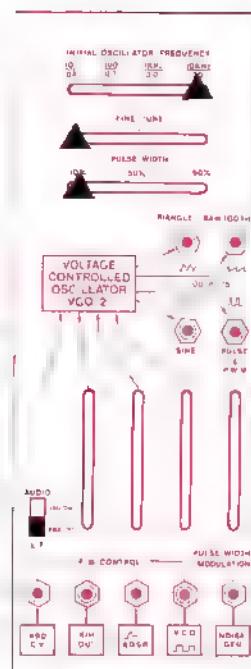
PLAY KEY C4

4 PATCHCORDS

Panning Freight Train

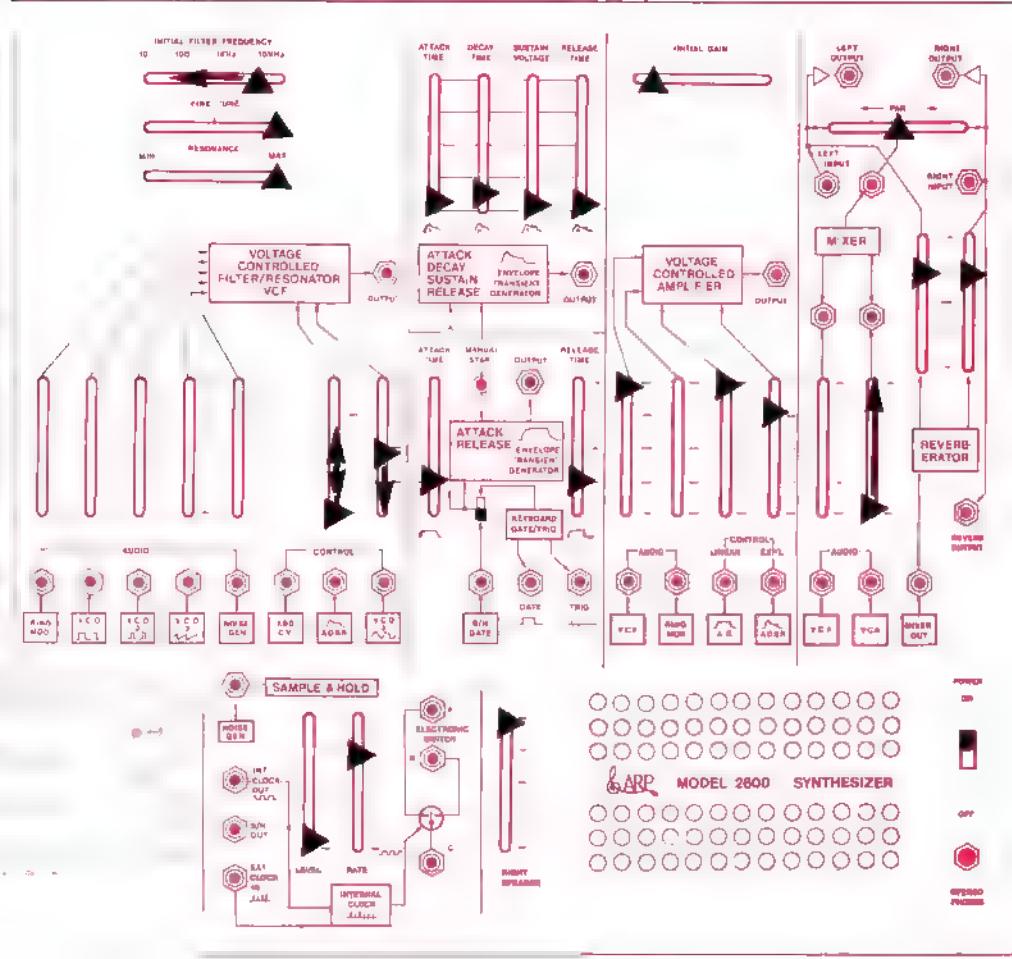
71.

VCO TUNING



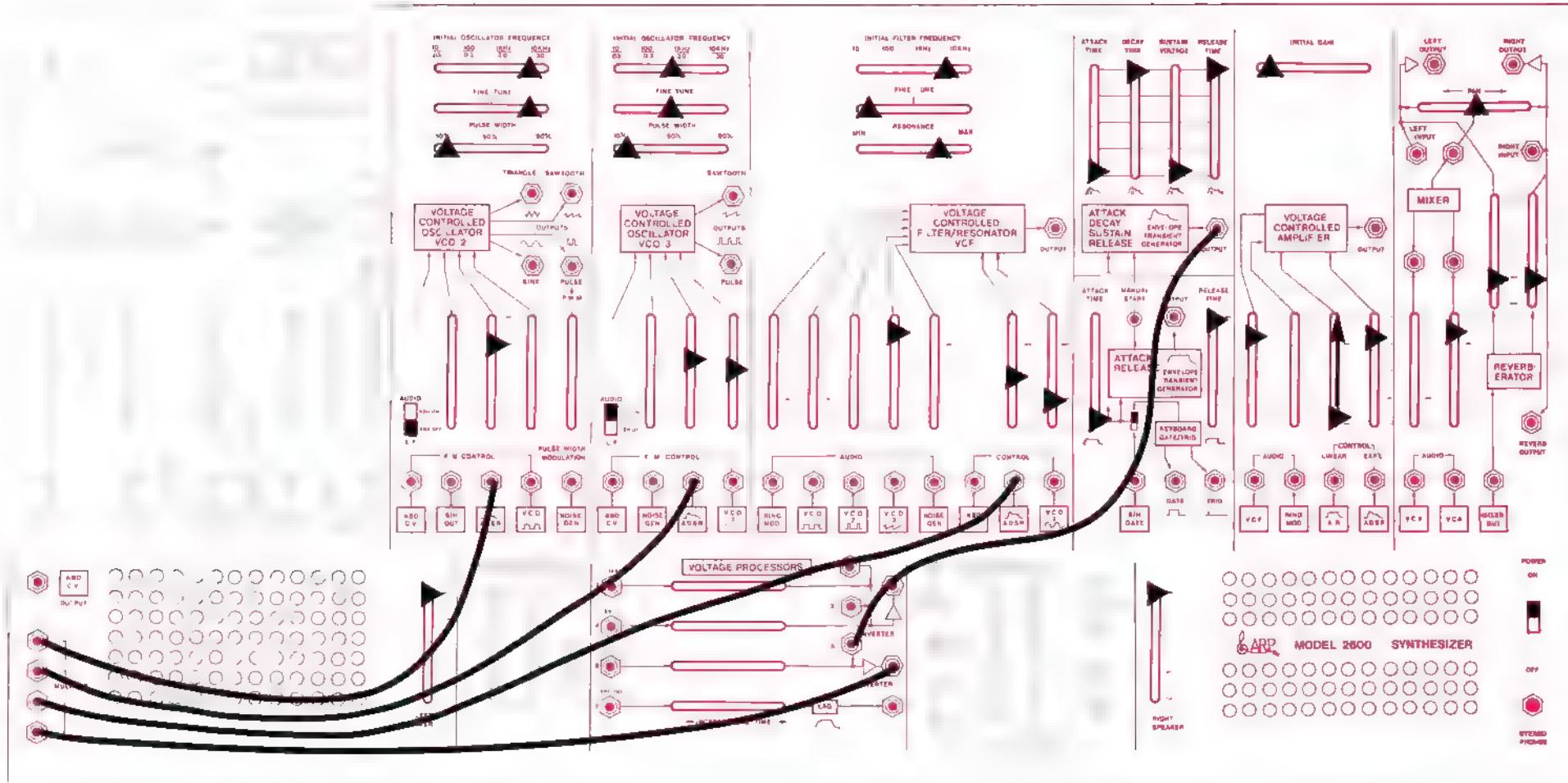
SEQUENCE

1. Raise VCA into Mixer.
2. Move VCF frequency from 10K to 100 slowly.
3. Lower VCO 2 $\sim\sim$ at VCF and jerk ADSR slider into VCF up and down in time to the drum solo.



Edgar Winter's "Frankenstein"

72.

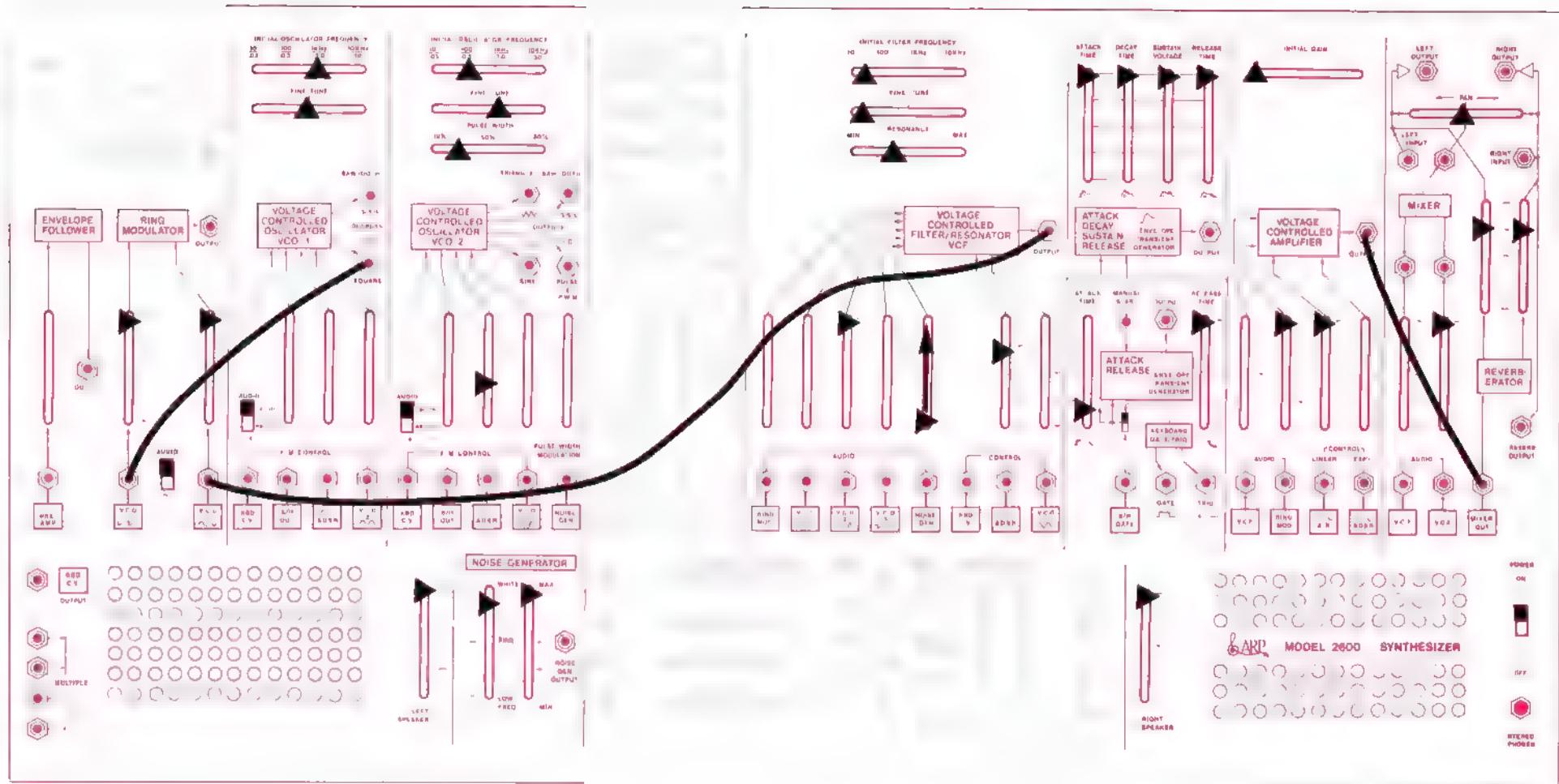


Raise AR into VCA for longer Boing.

5 PATCHCORDS

Boing!

73.

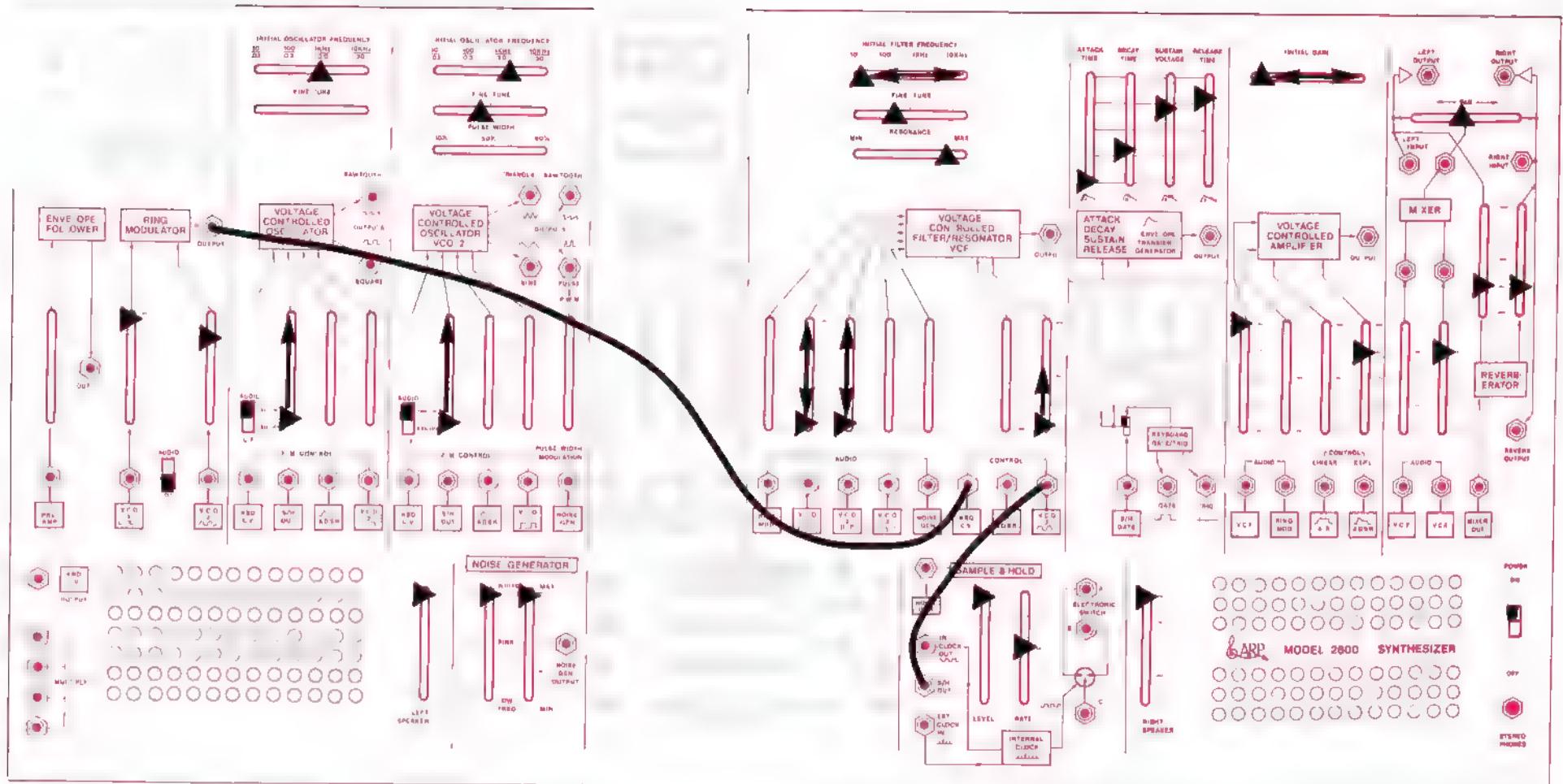


Raise Noise into VCF for special effects.
PLAY KEY Eflat3

3 PATCHCORDS

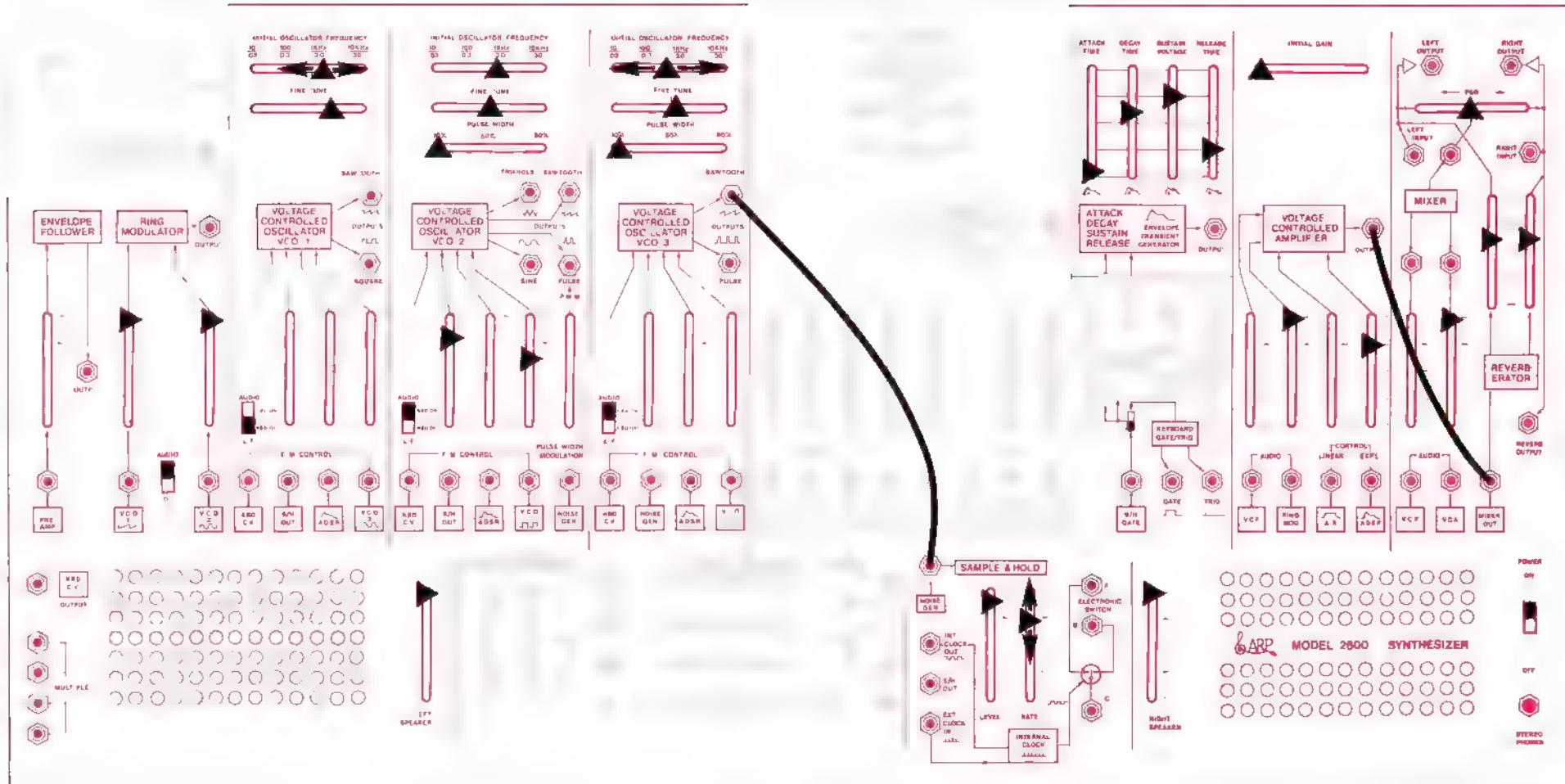
Wampus Monster

74.



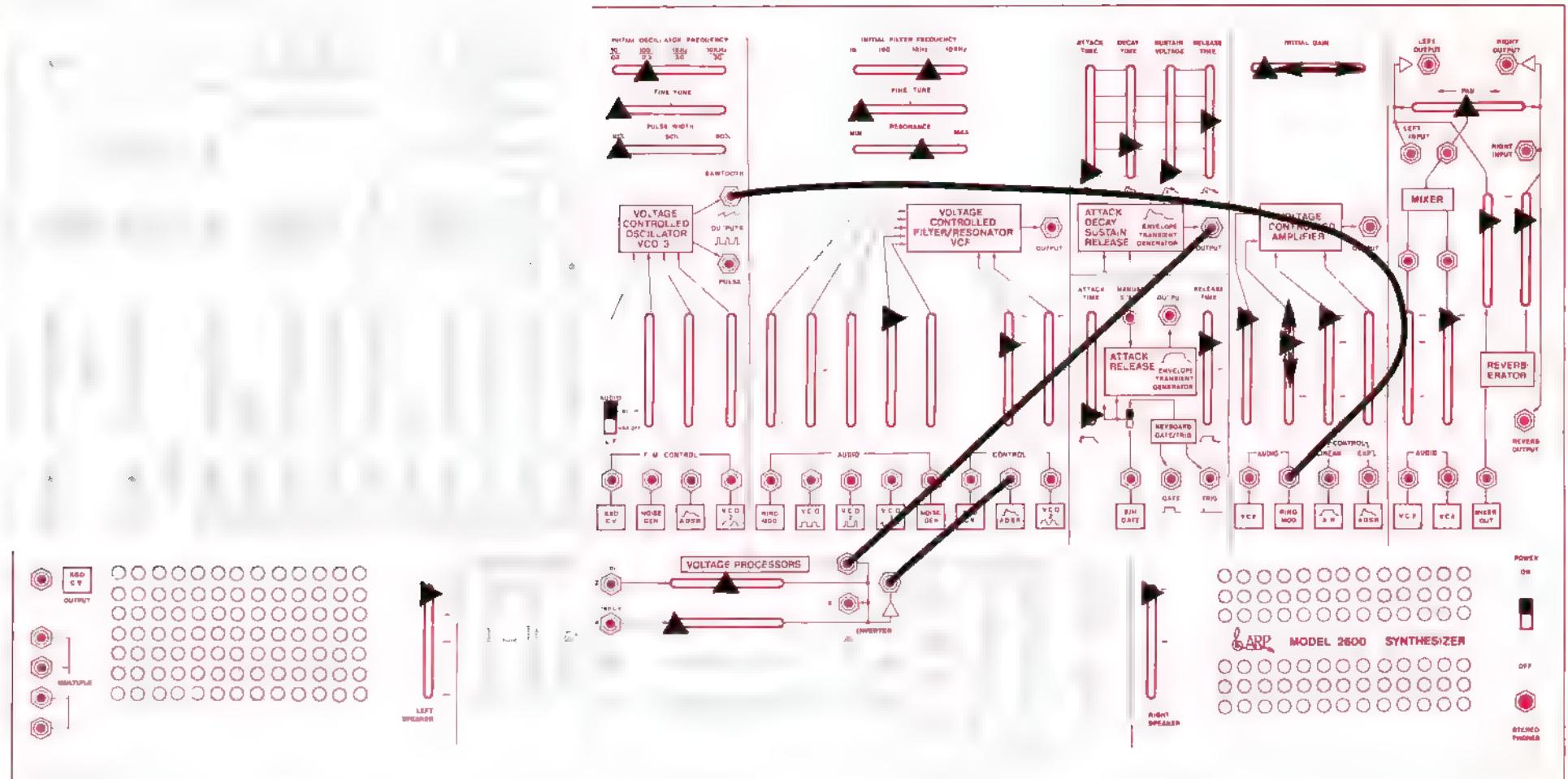
Assorted Splats & Sproings

75.



Prancing Raindrops

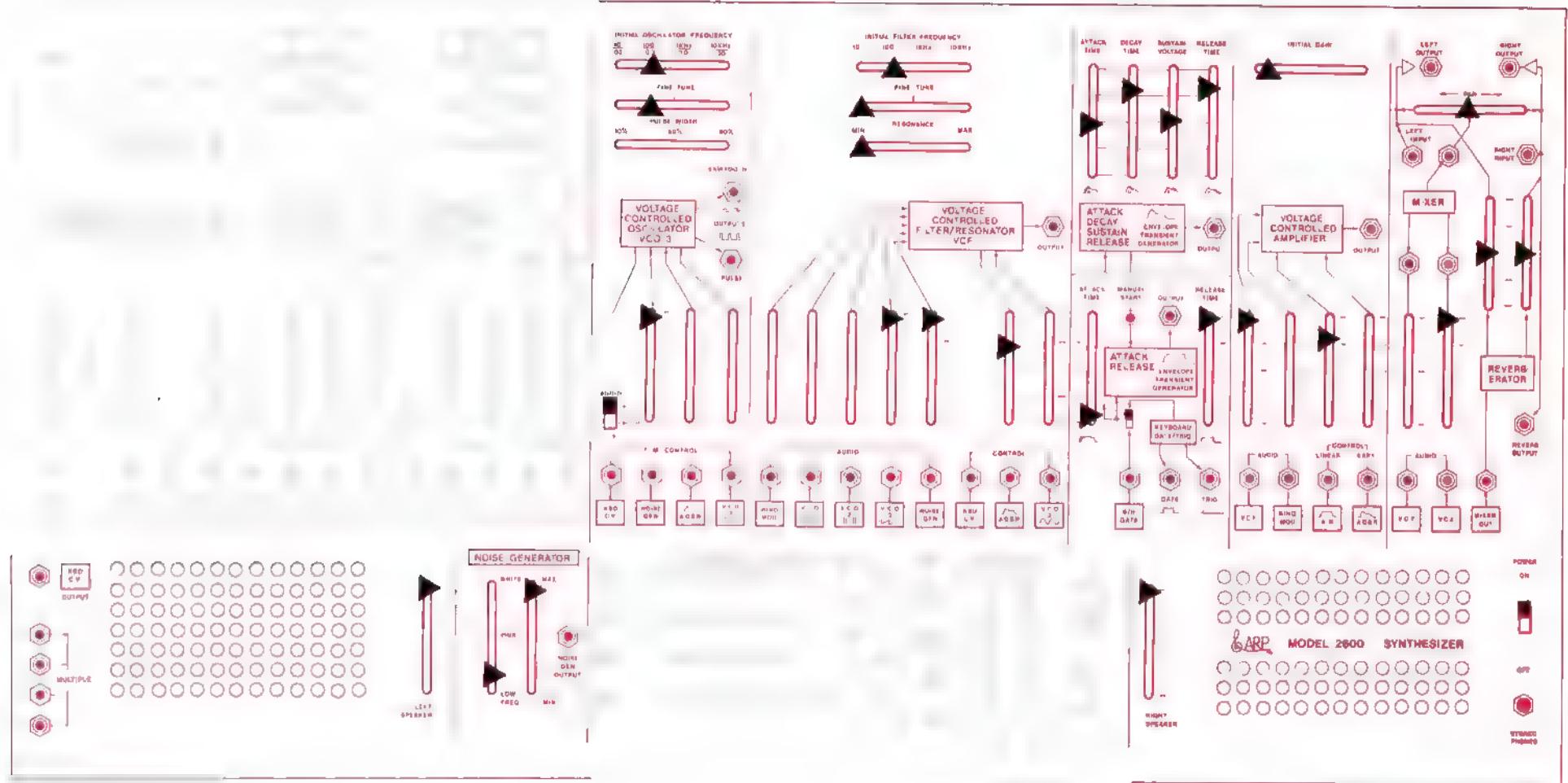
76.



1. Open VCA → .
2. Adjust VCO 3 gain into VCA for minimum volume
3. Close VCA ← .

3 PATCHCORDS

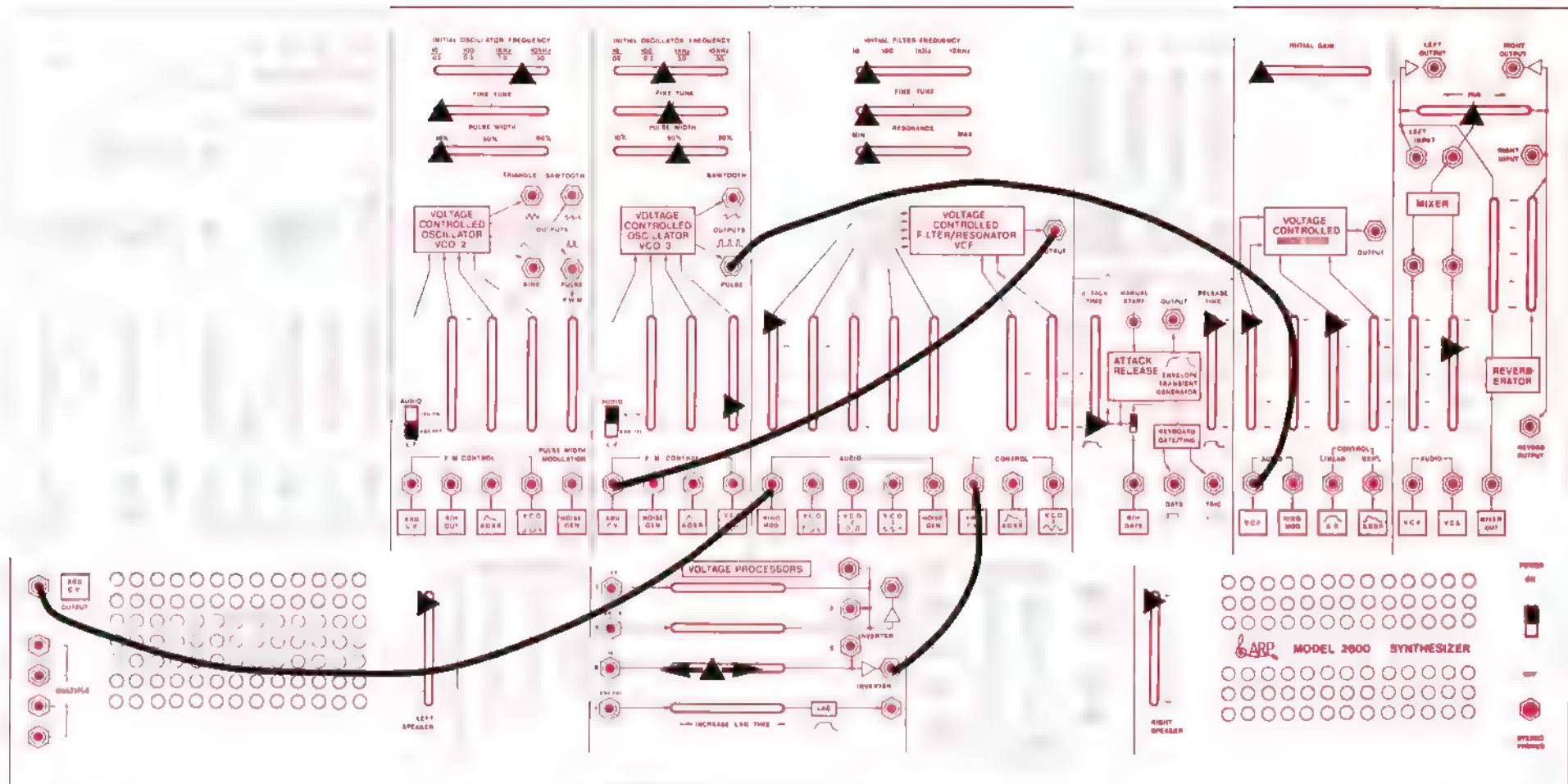
“Pwee” or Synthesized High-pass Filter 77.



Explosion

78.

Advanced Applications

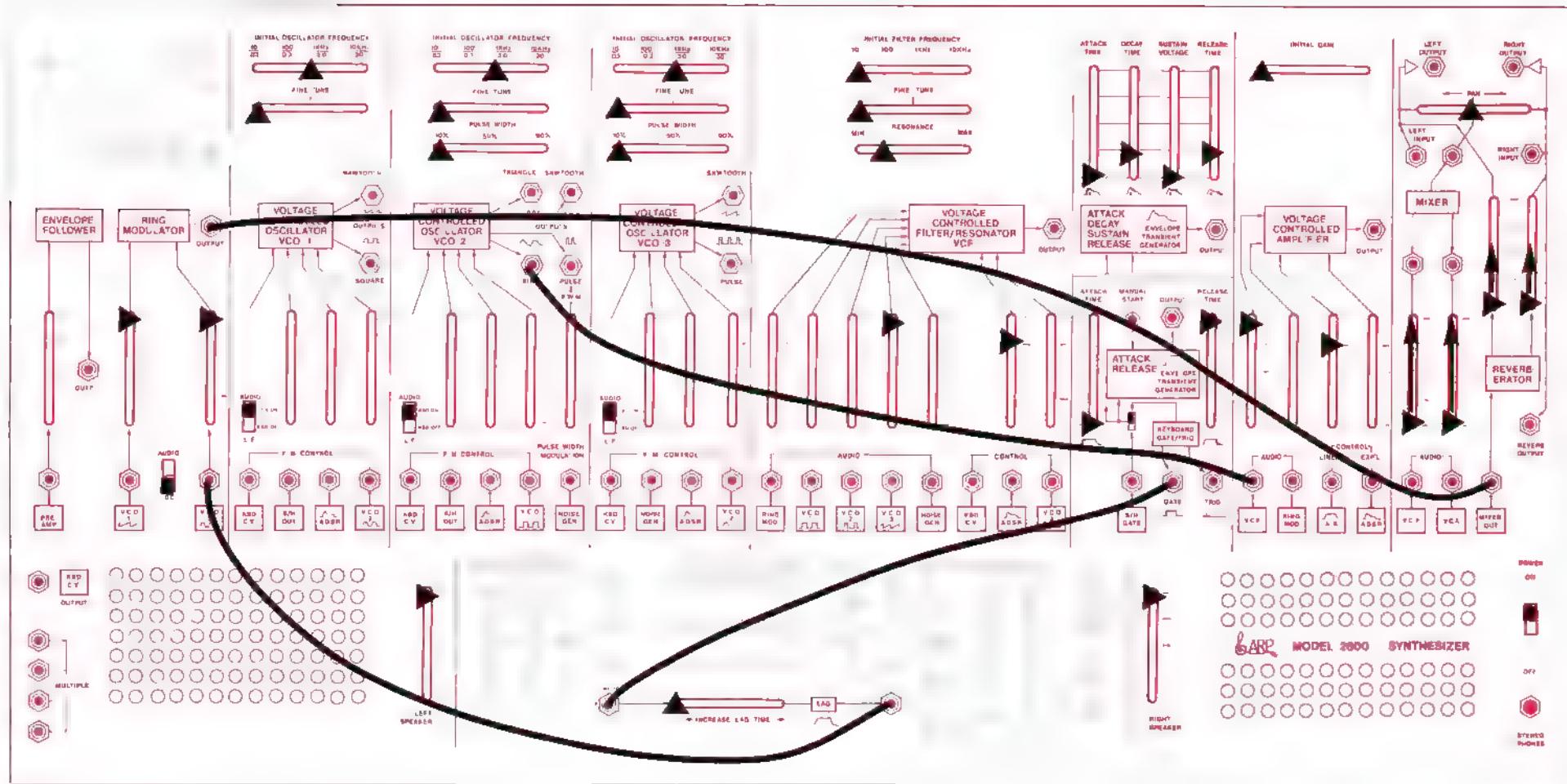


Adjust Inverter for 'glide time'.

4 PATCHCORDS

Ultraglide with Release Memory

79

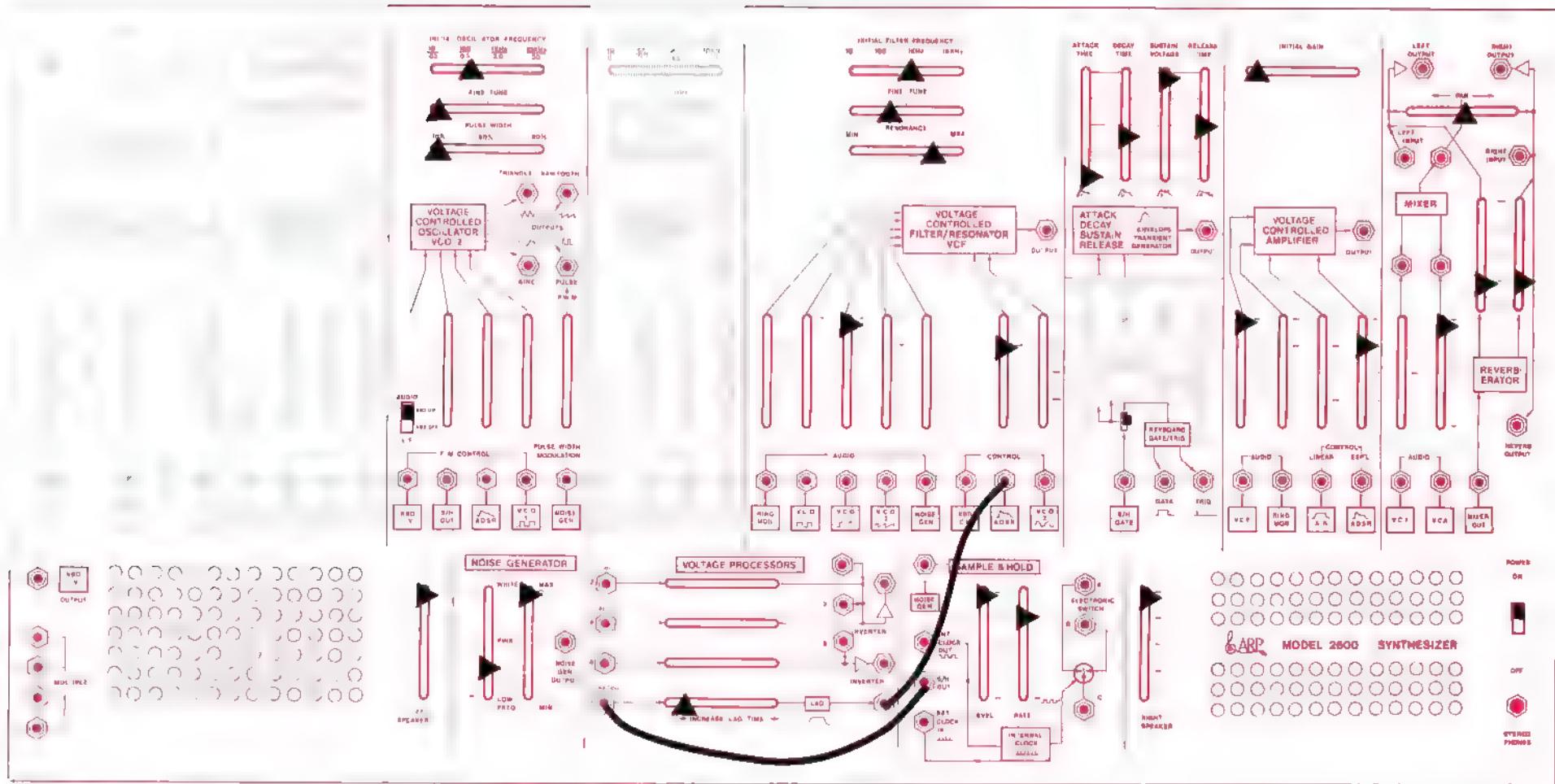


Tune Oscillators as desired.

Balance volume at arrows.

4 PATCHCORDS

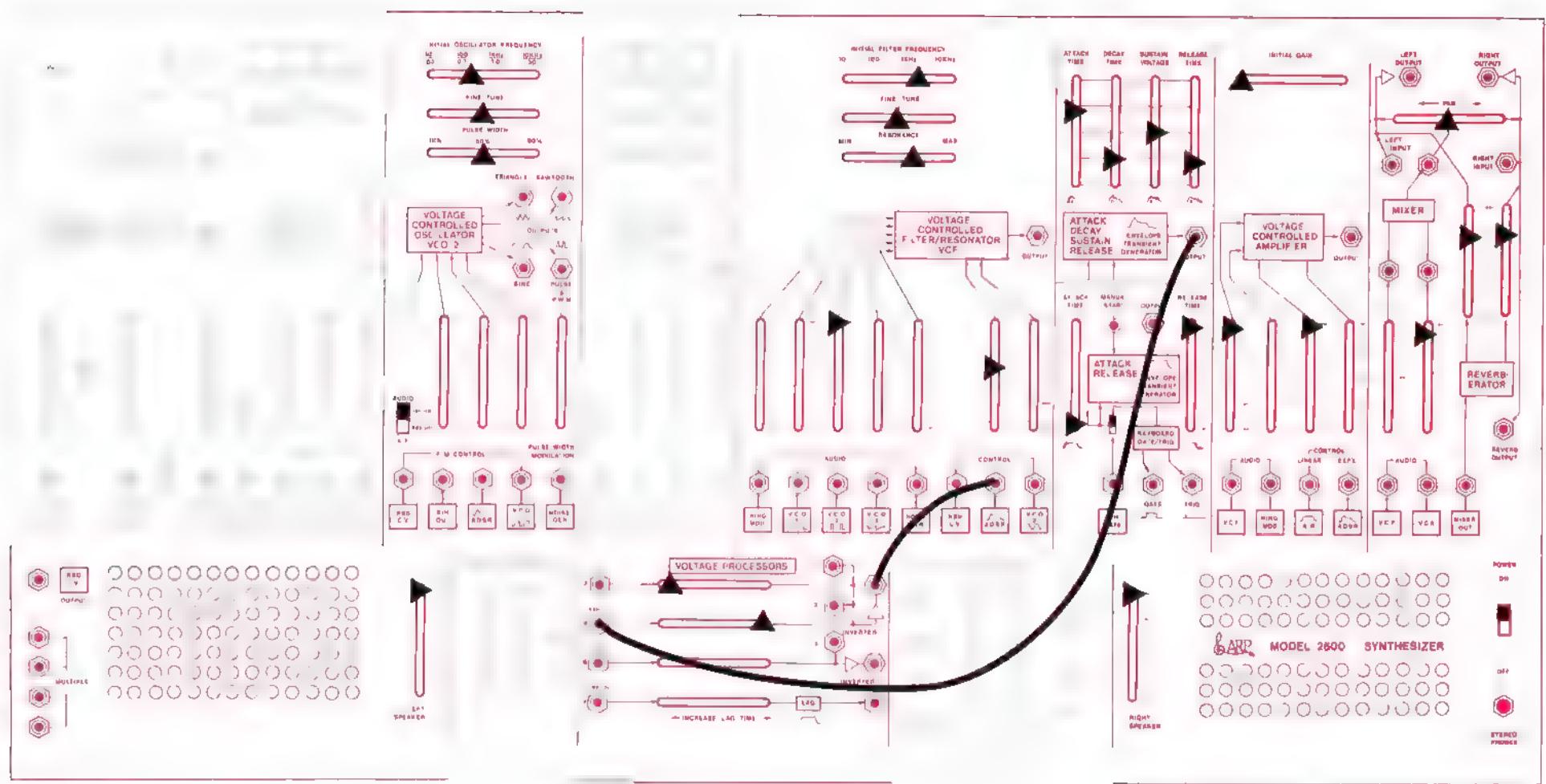
**Trio:
Three Separate Envelopes & Timbres 80.**



2 PATCHCORDS

Lagged S/H to Filter

81.

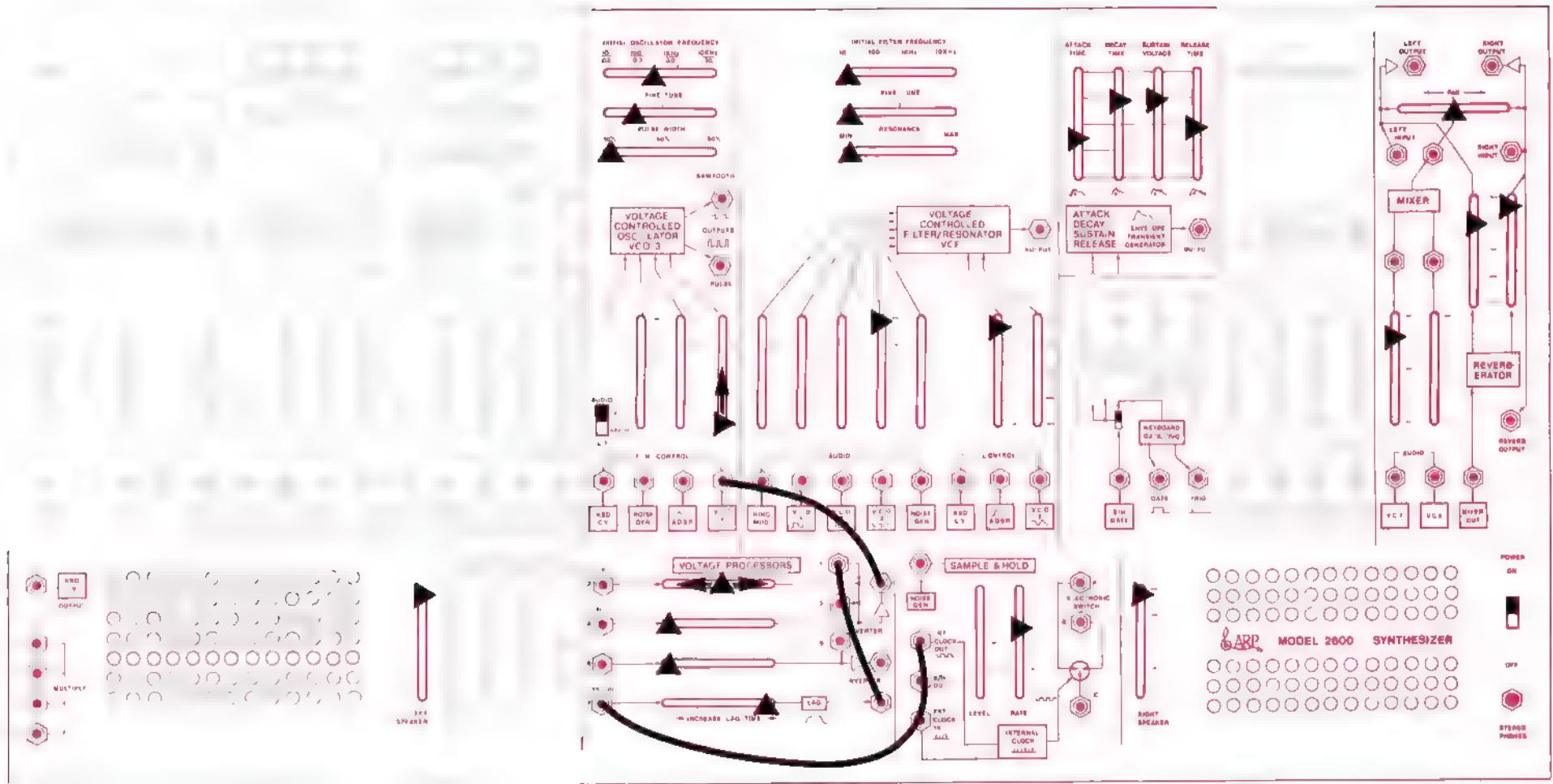


Adjust VCF frequency for desired 'owwa';

2 PATCHCORDS

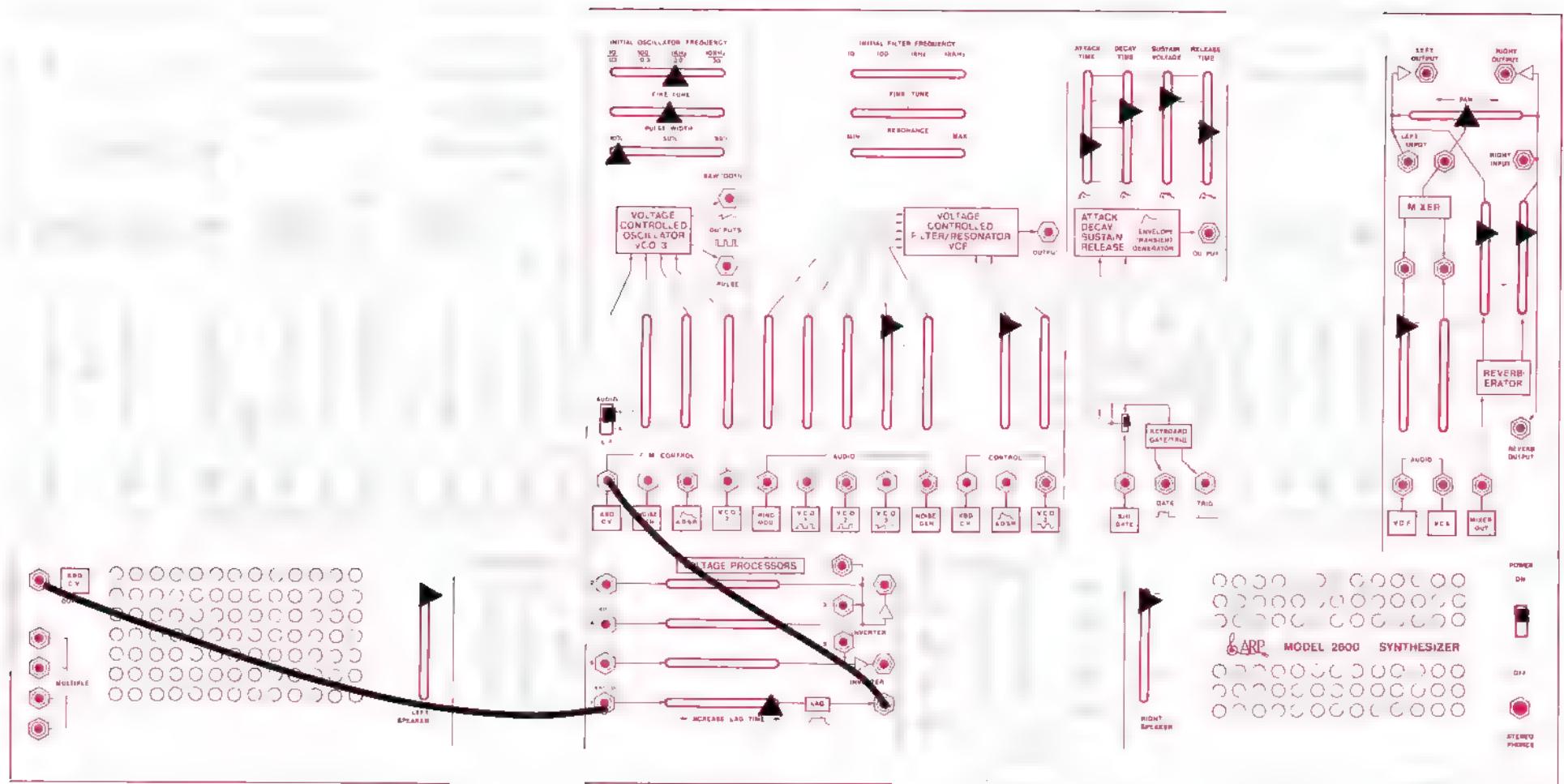
“Owwa” or Inverted ADSR to VCF

82.



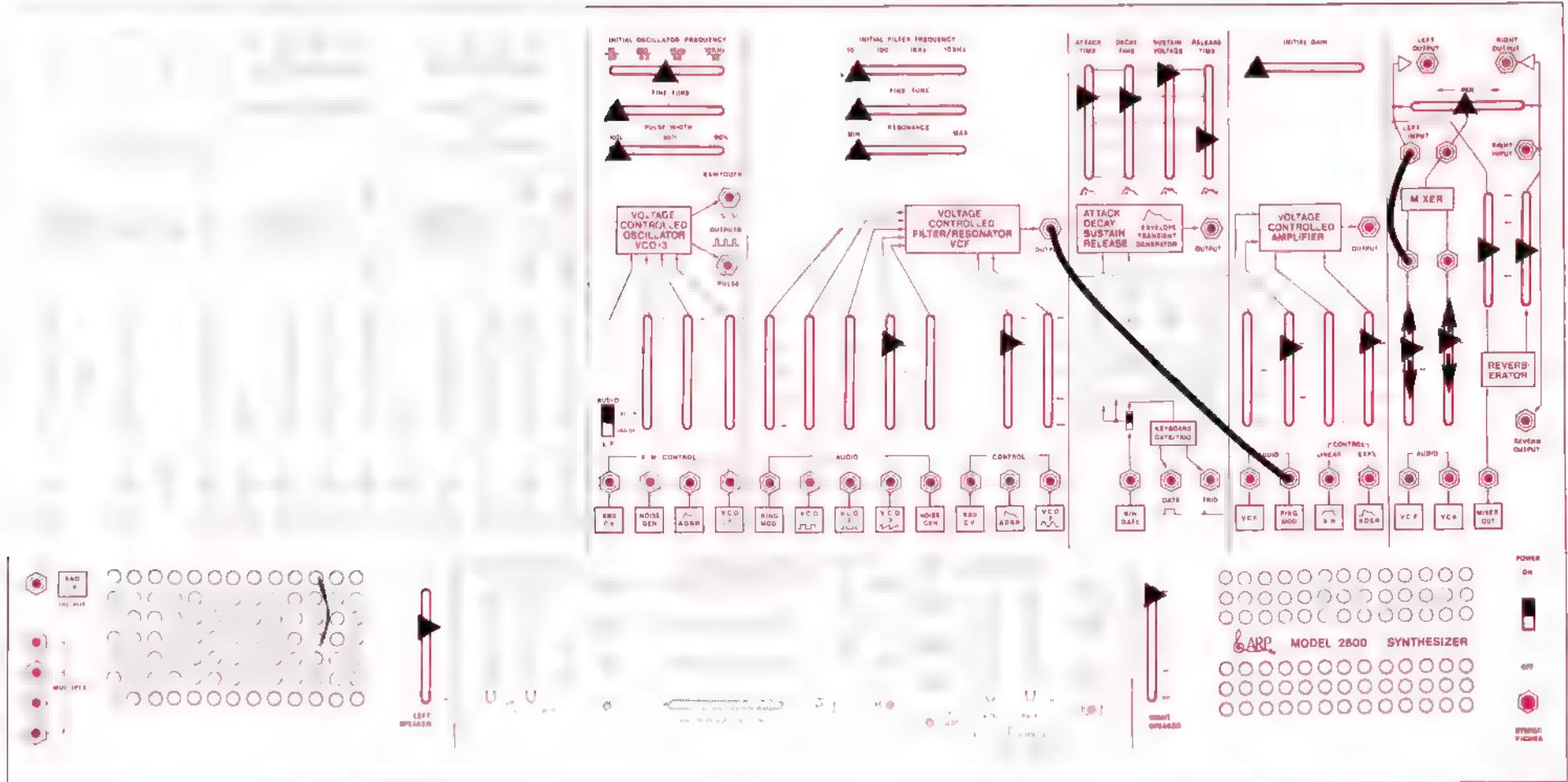
Basic Vibrato from Internal Oscillator

83.



Lagged Keyboard Voltage

84.

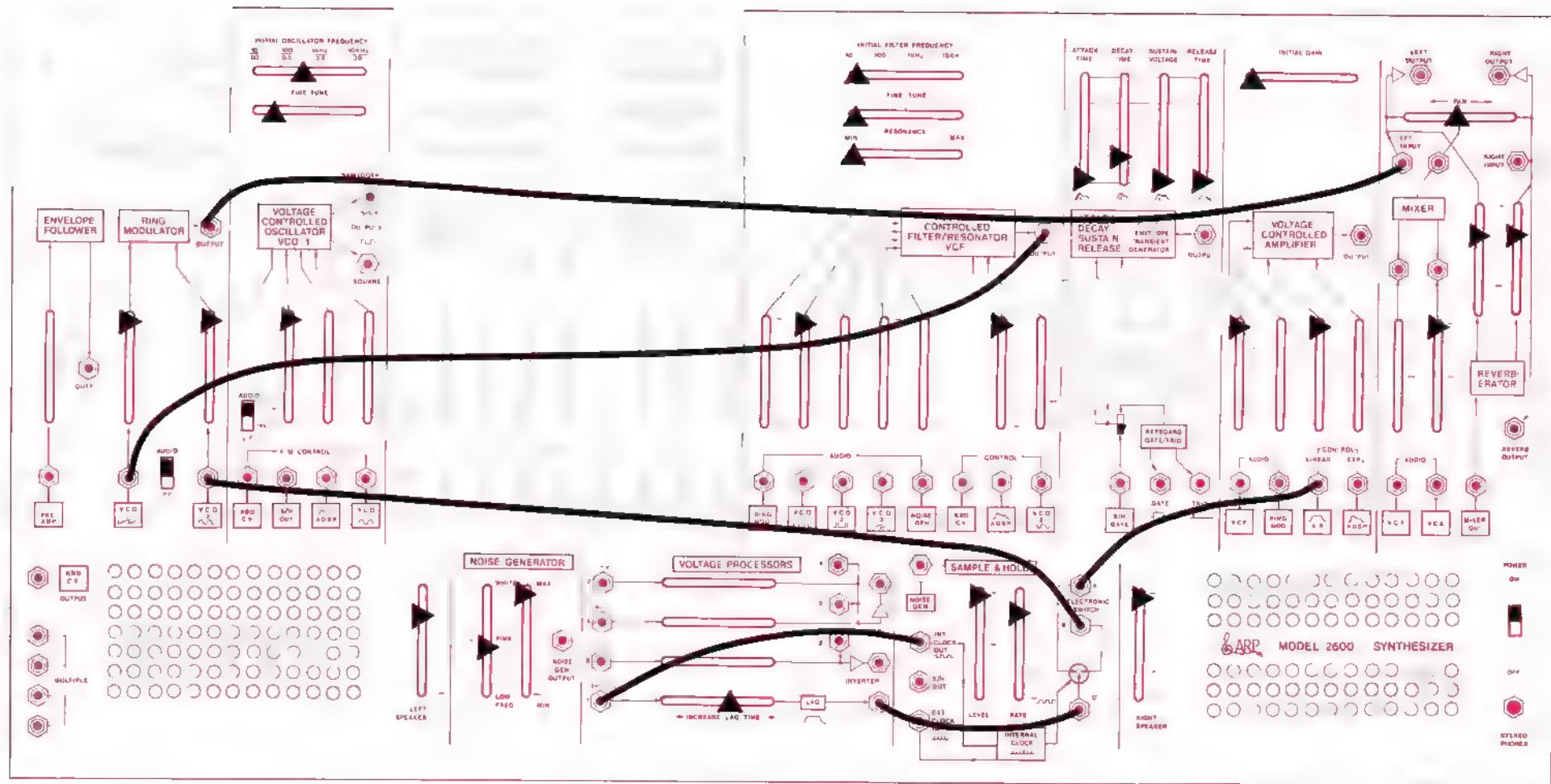


1. Hold down any key.
2. Adjust VCF and VCA Mixer sliders for minimum volume in left speaker.
3. Adjust ADSR sliders for speed and position of pan.

2 PATCHCORDS

ADSR Pan

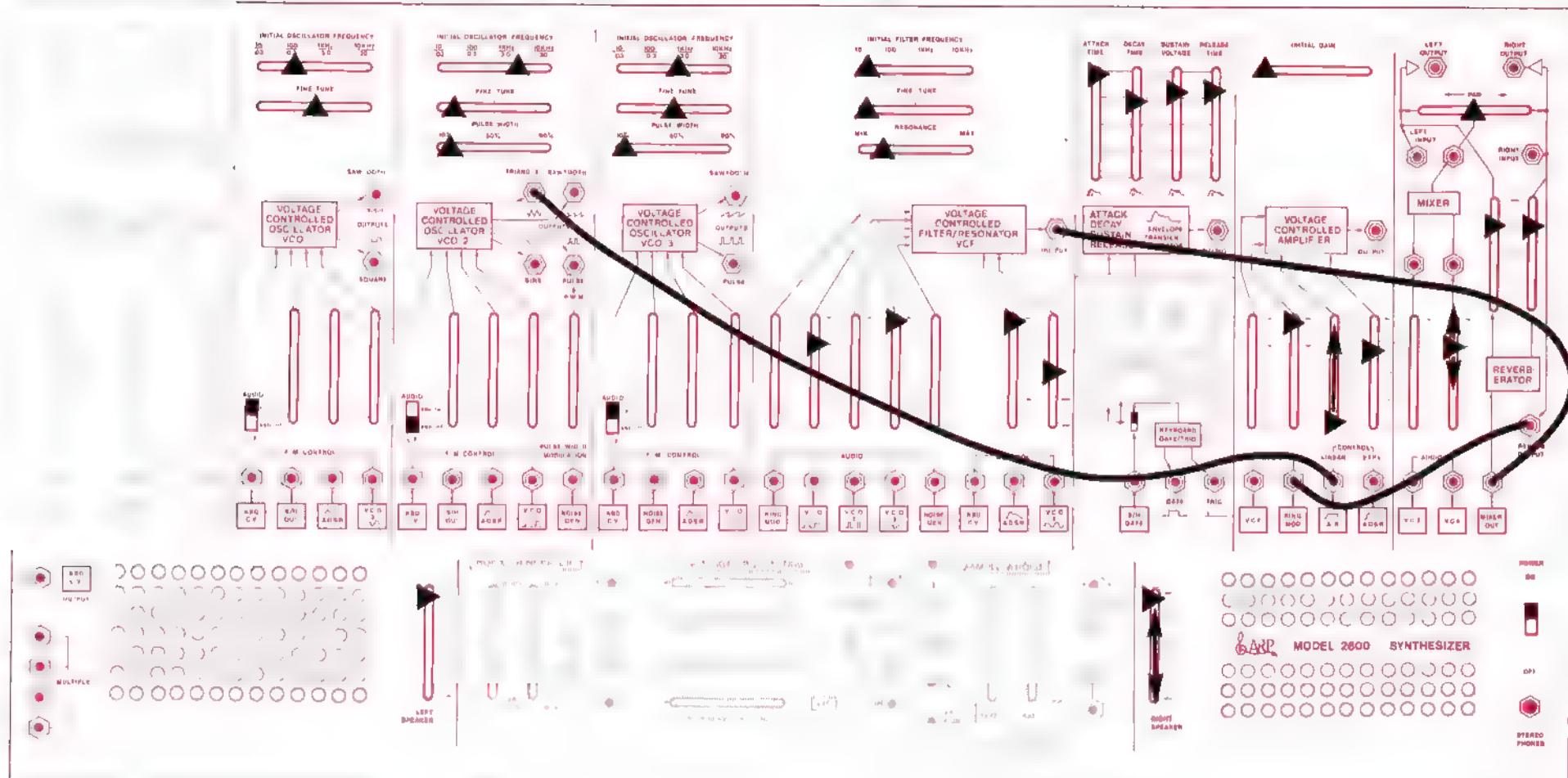
85.



6 PATCHCORDS

Auto-pan on S/H

86.

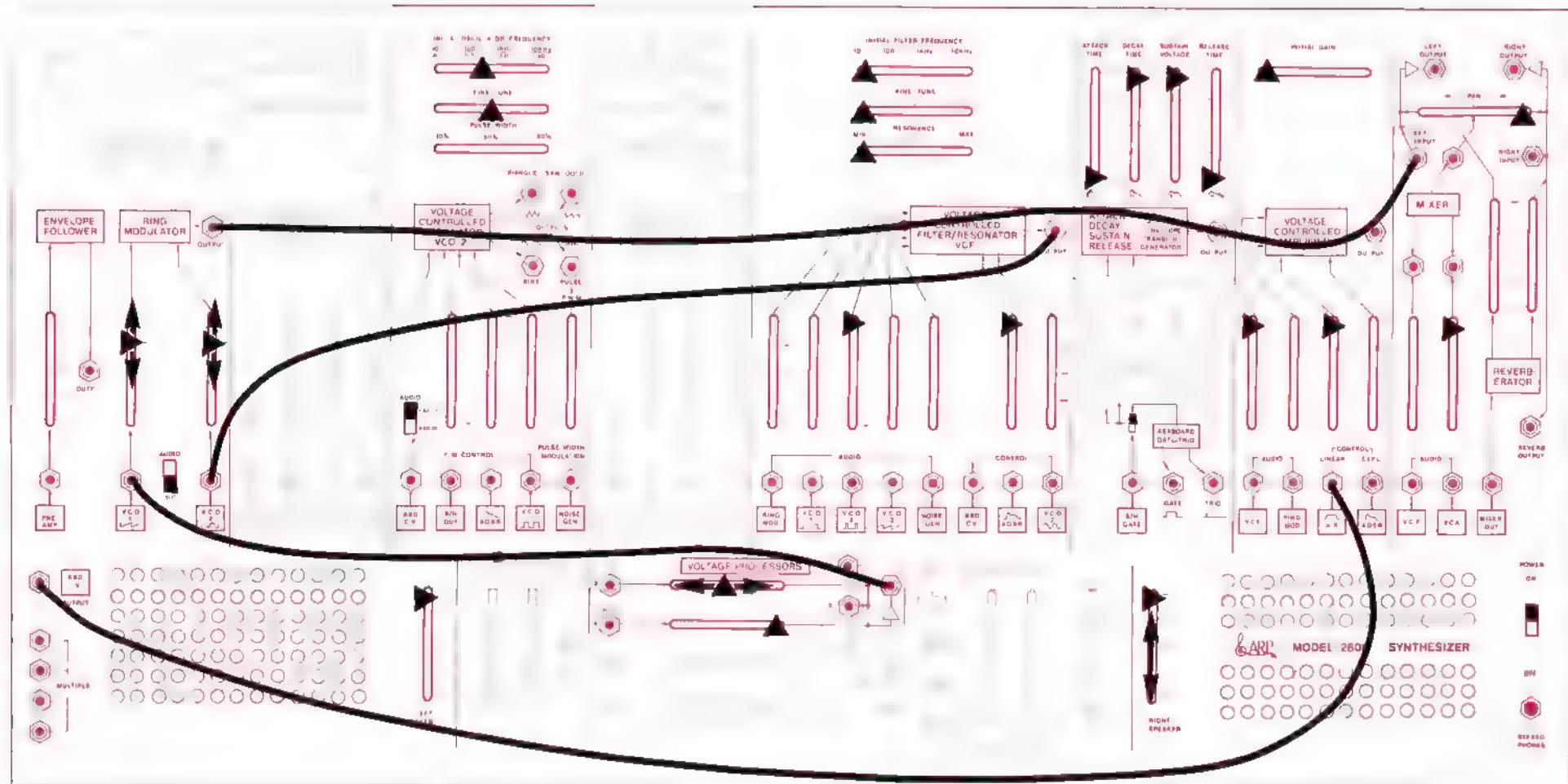


1. Tune VCO 1 and 3 as desired.
2. Close right speaker |
3. Press any key and adjust VCA into Mixer for minimum volume in left speaker.
4. Open right speaker | and raise Linear Control into VCA.
5. Adjust VCO 2 frequency for pan speed.

3 PATCHCORDS

Auto-pan with Reverb

87.

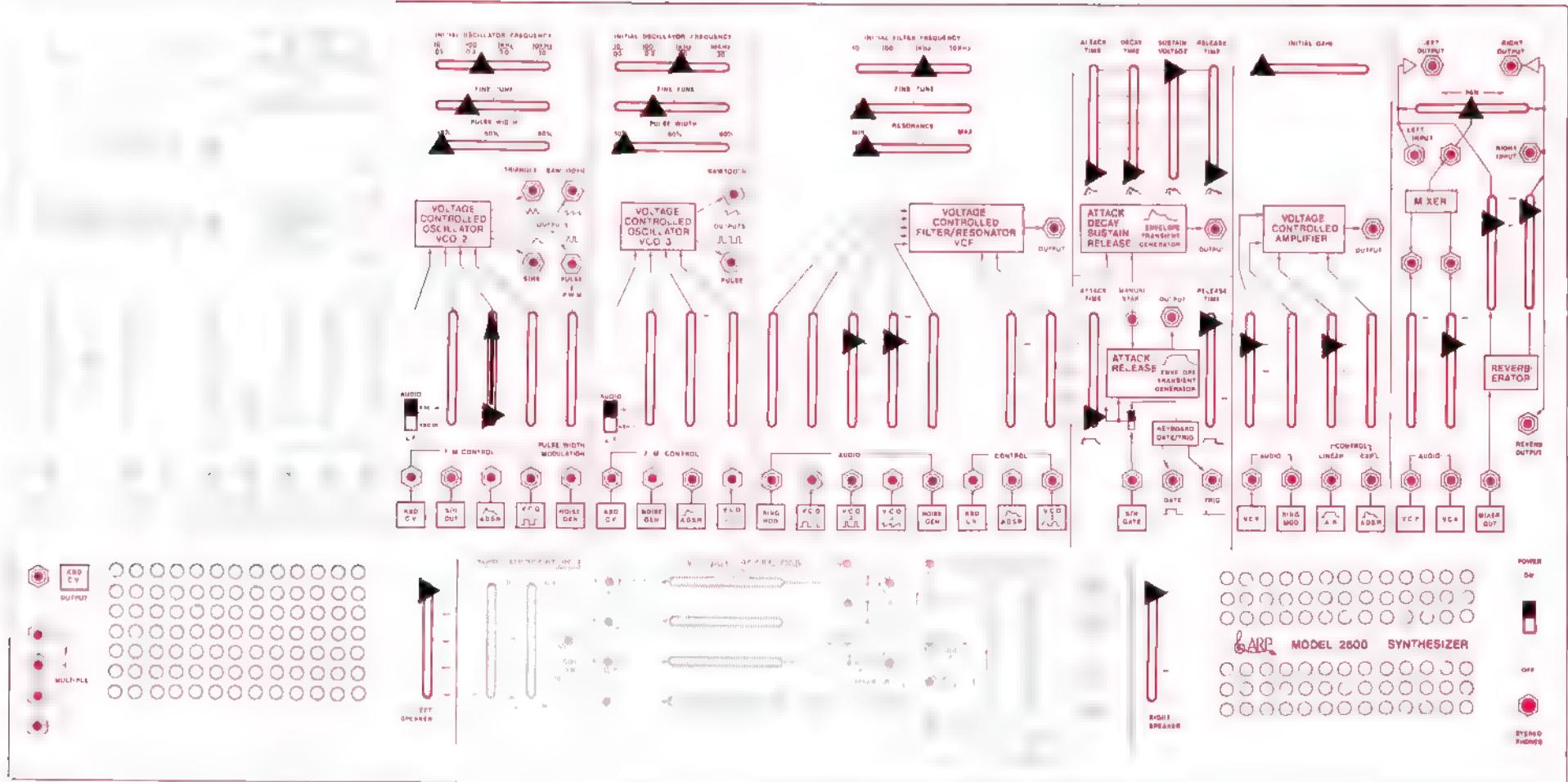


1. Close right speaker ↓
2. Press Key C5 and adjust Inverter slider to get minimum volume in left speaker.
3. Open right speaker. ↑
4. Adjust input sliders on Ring Modulator for balance while depressing Key C3.

4 PATCHCORDS

Keyboard-controlled Pan

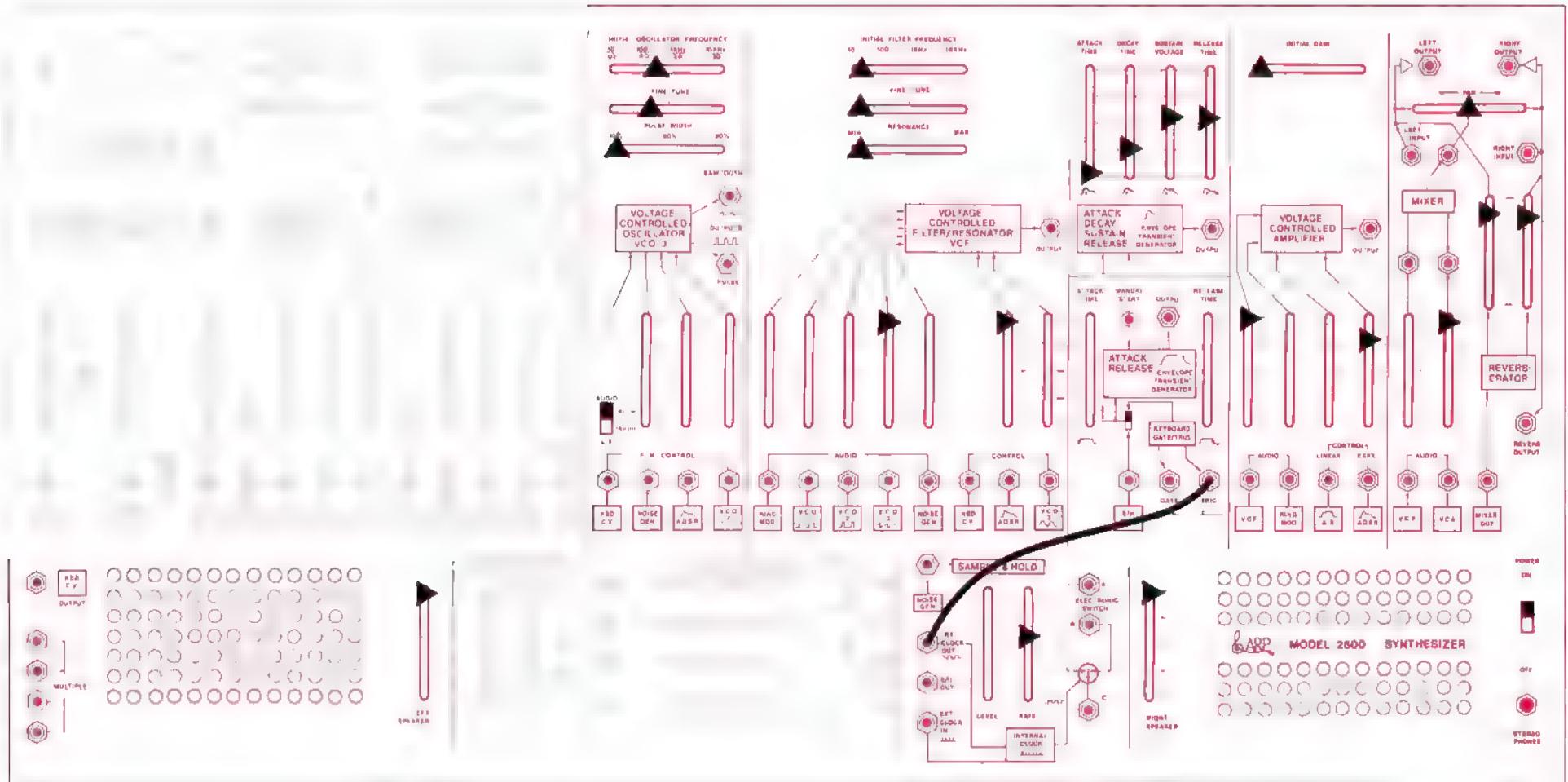
88.



1. Tune VCO 2 and 3 to desired interval.
2. Raise ADSR into VCO 2.
3. Play staccato.

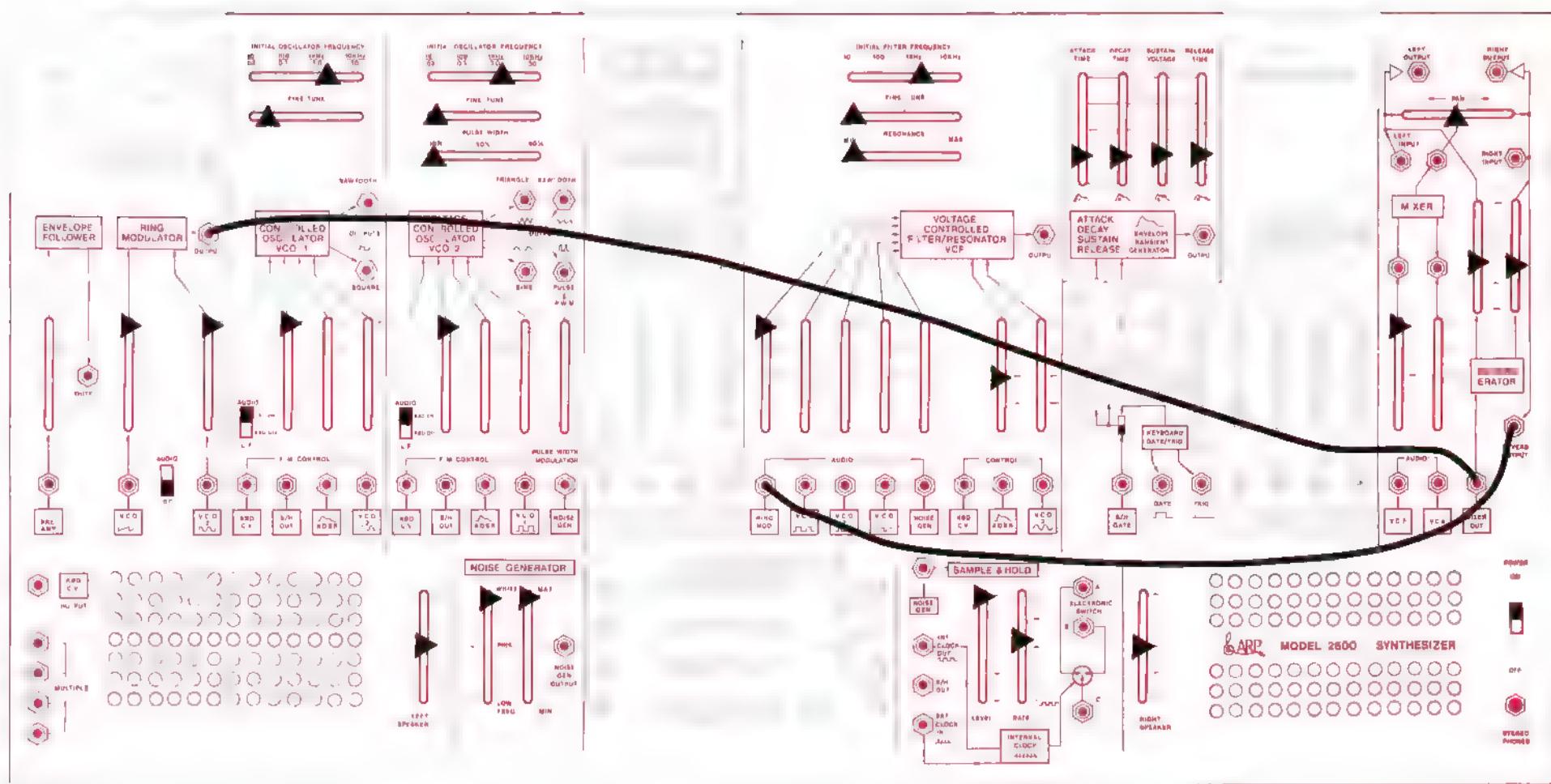
Release-follow

89.



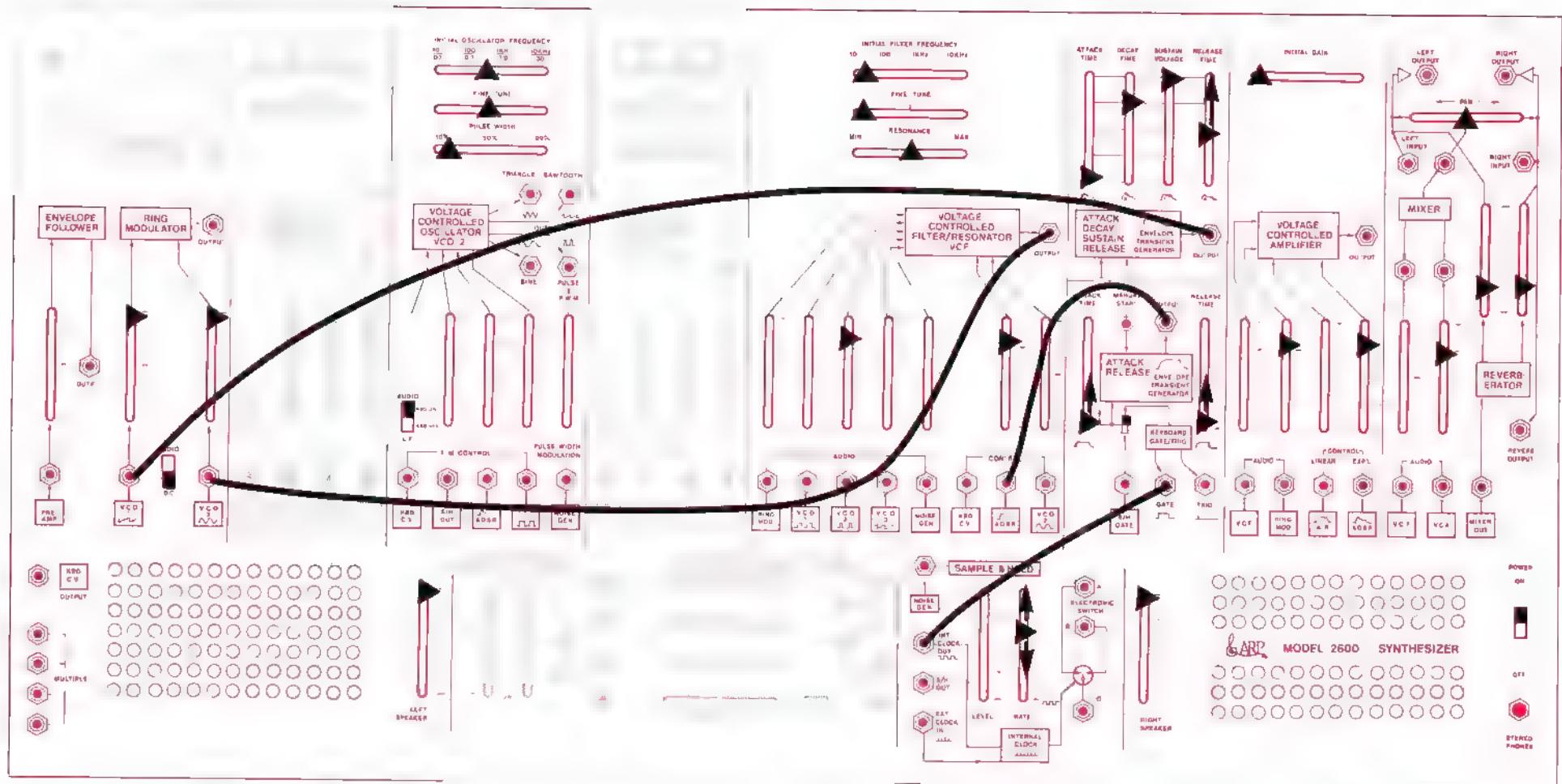
Touch-repeat

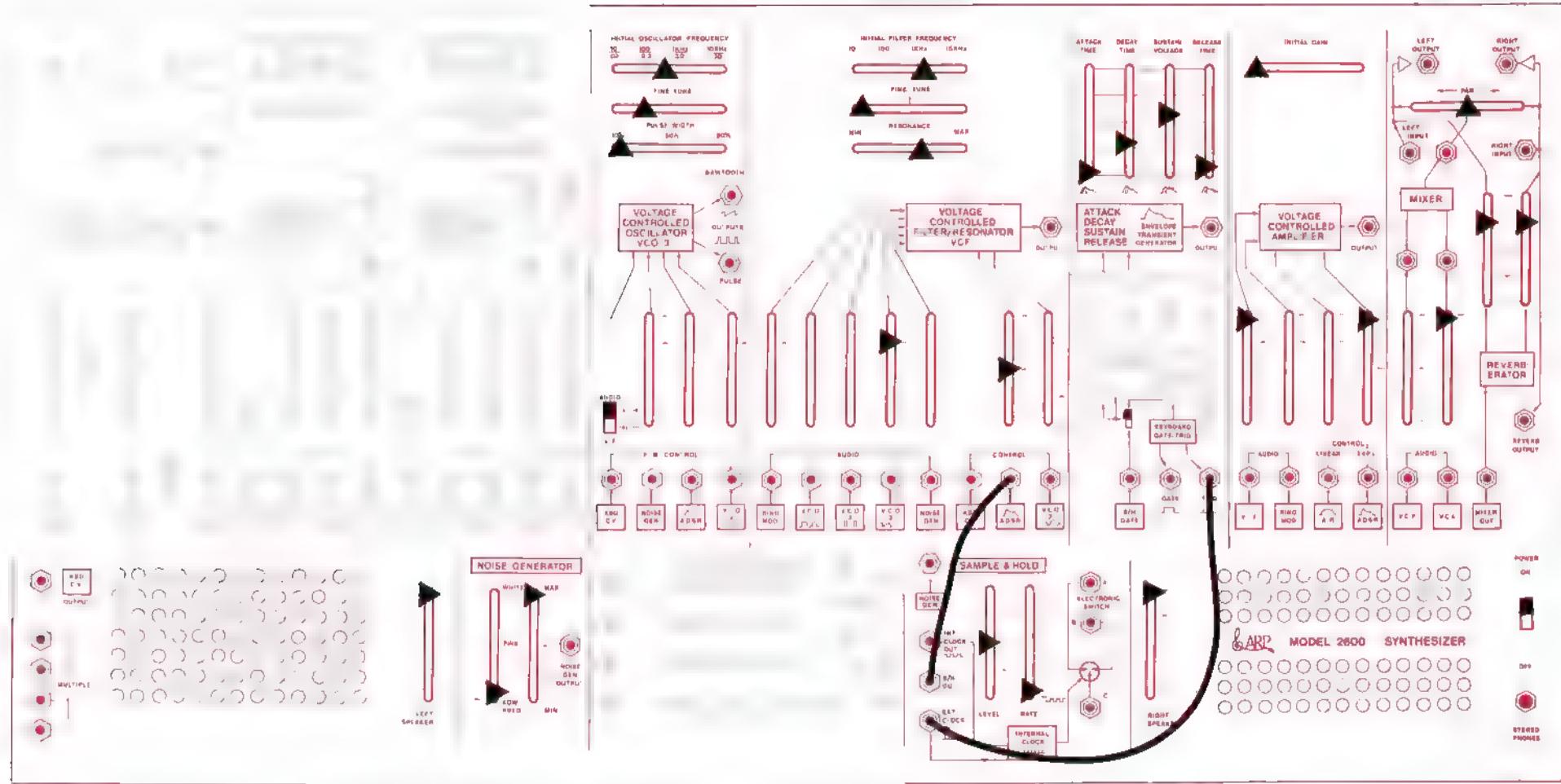
90.



S/H Echo

91.

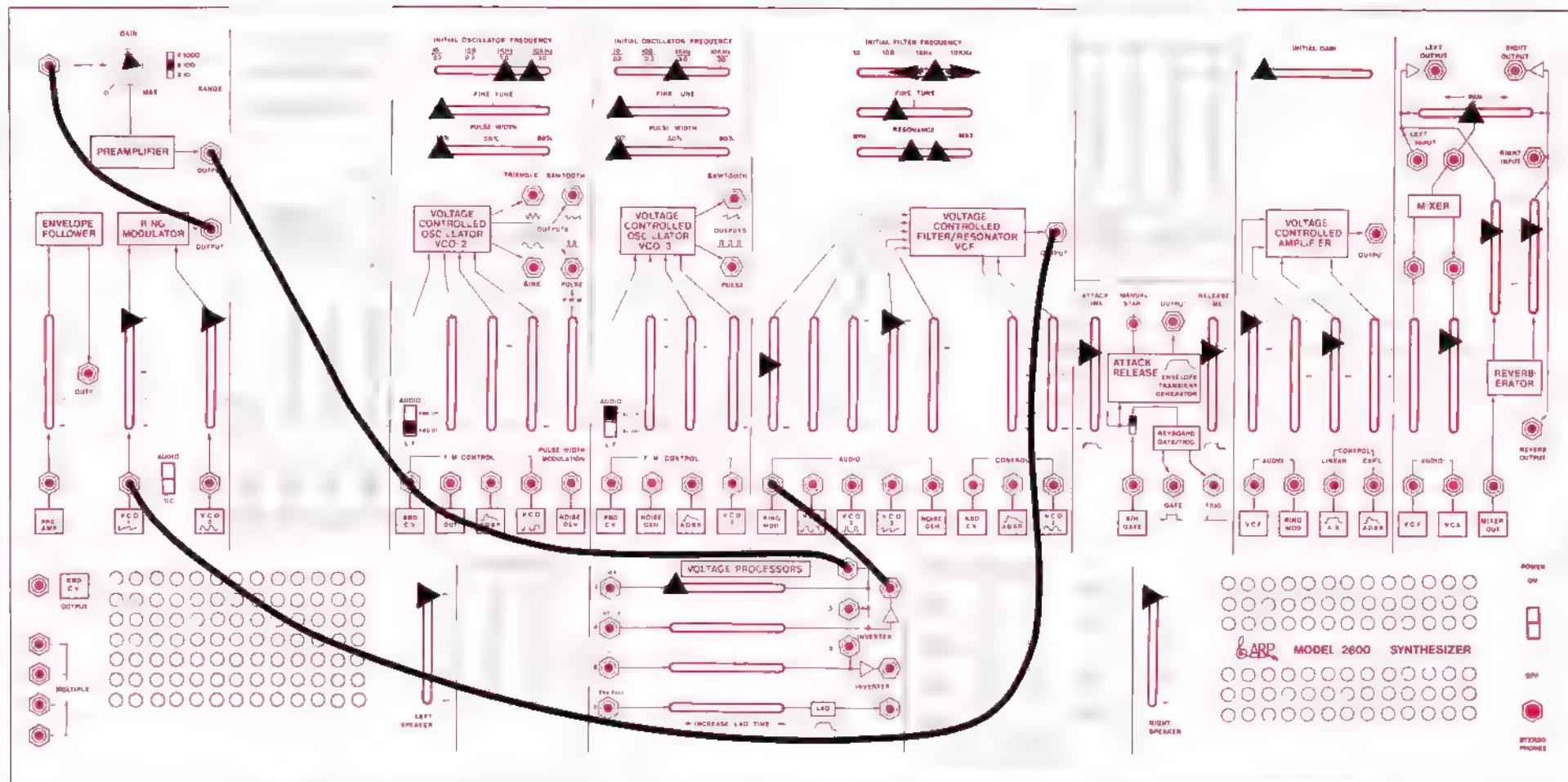




Random Filter Sample: Keyboard Triggered

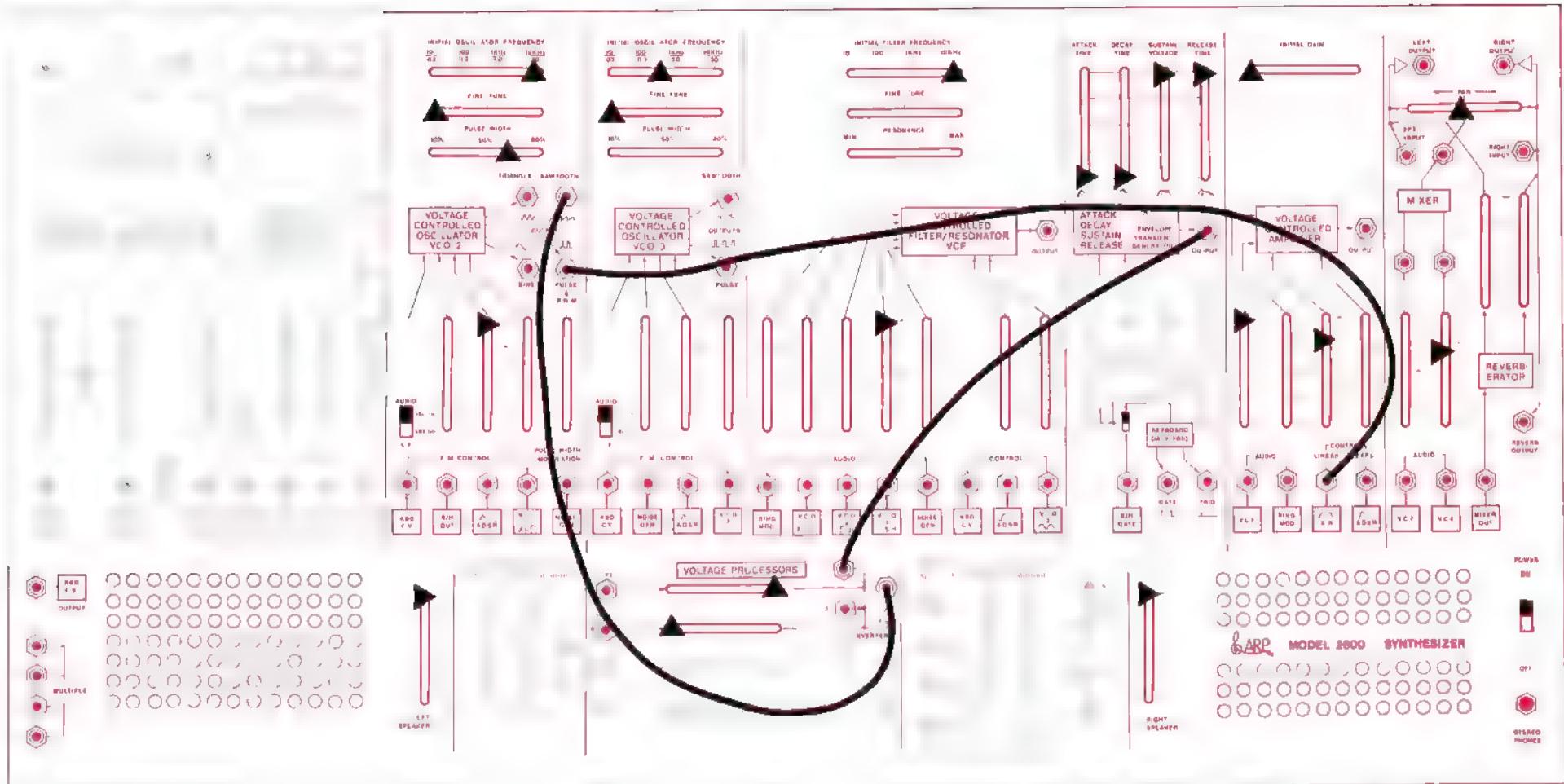
93.

2 PATCHCORDS



Voltage-controlled Resonance

94.

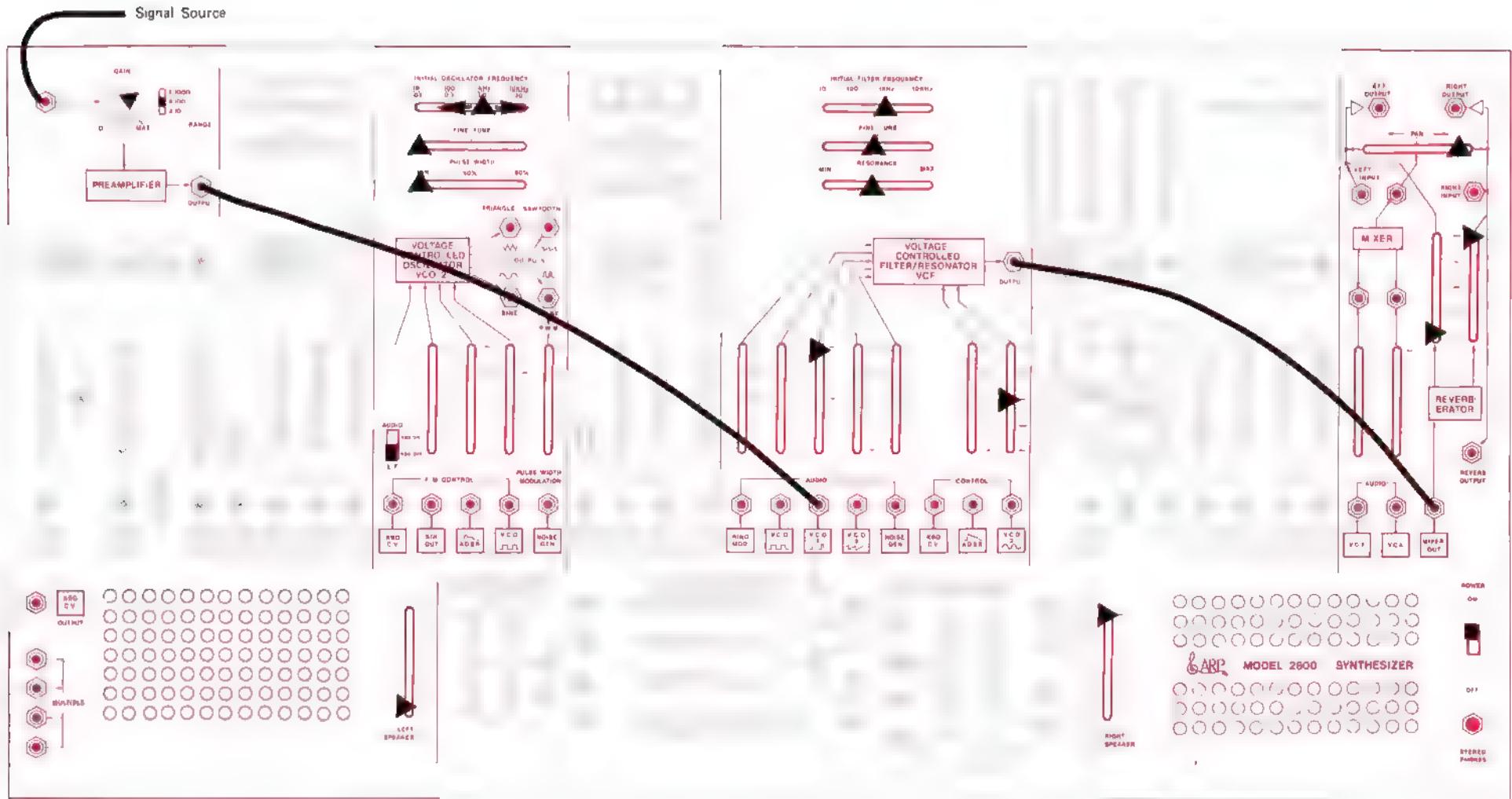


Adjust VCO 2 Pulse Width for envelope length.

3 PATCHCORDS

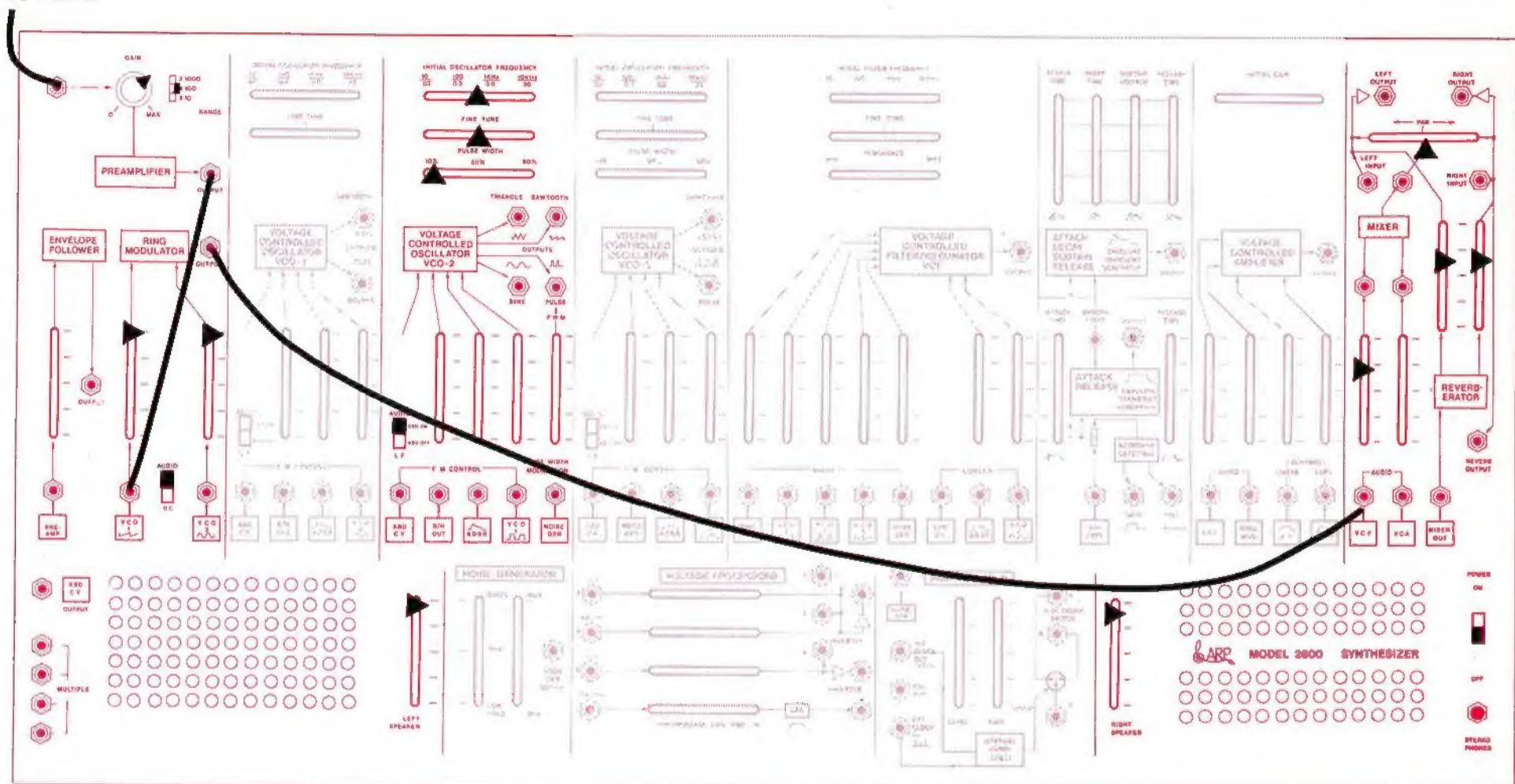
Voltage-controlled On-time

95.



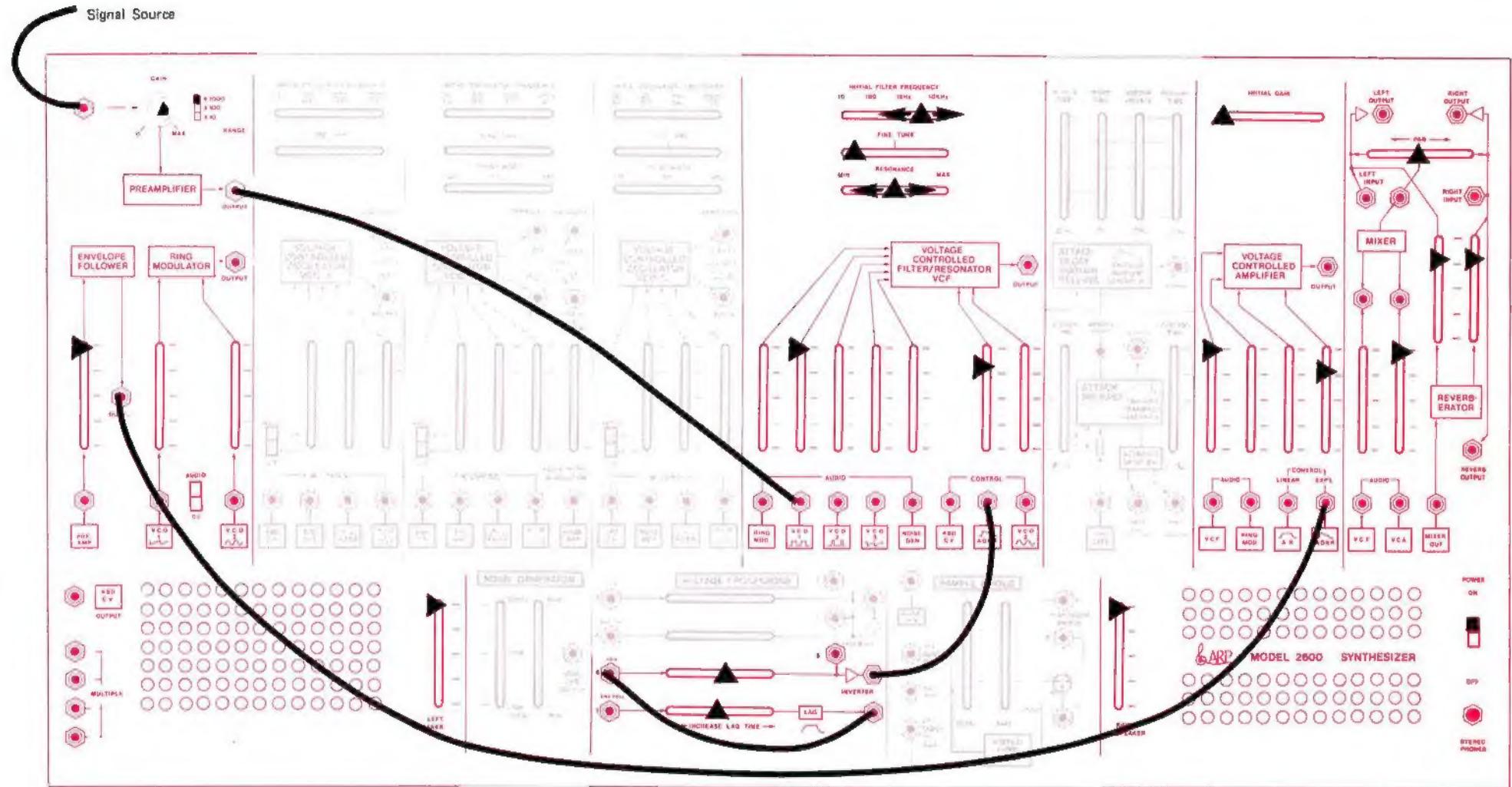
Ethereal Phase-shifting
on External Source

Signal Source



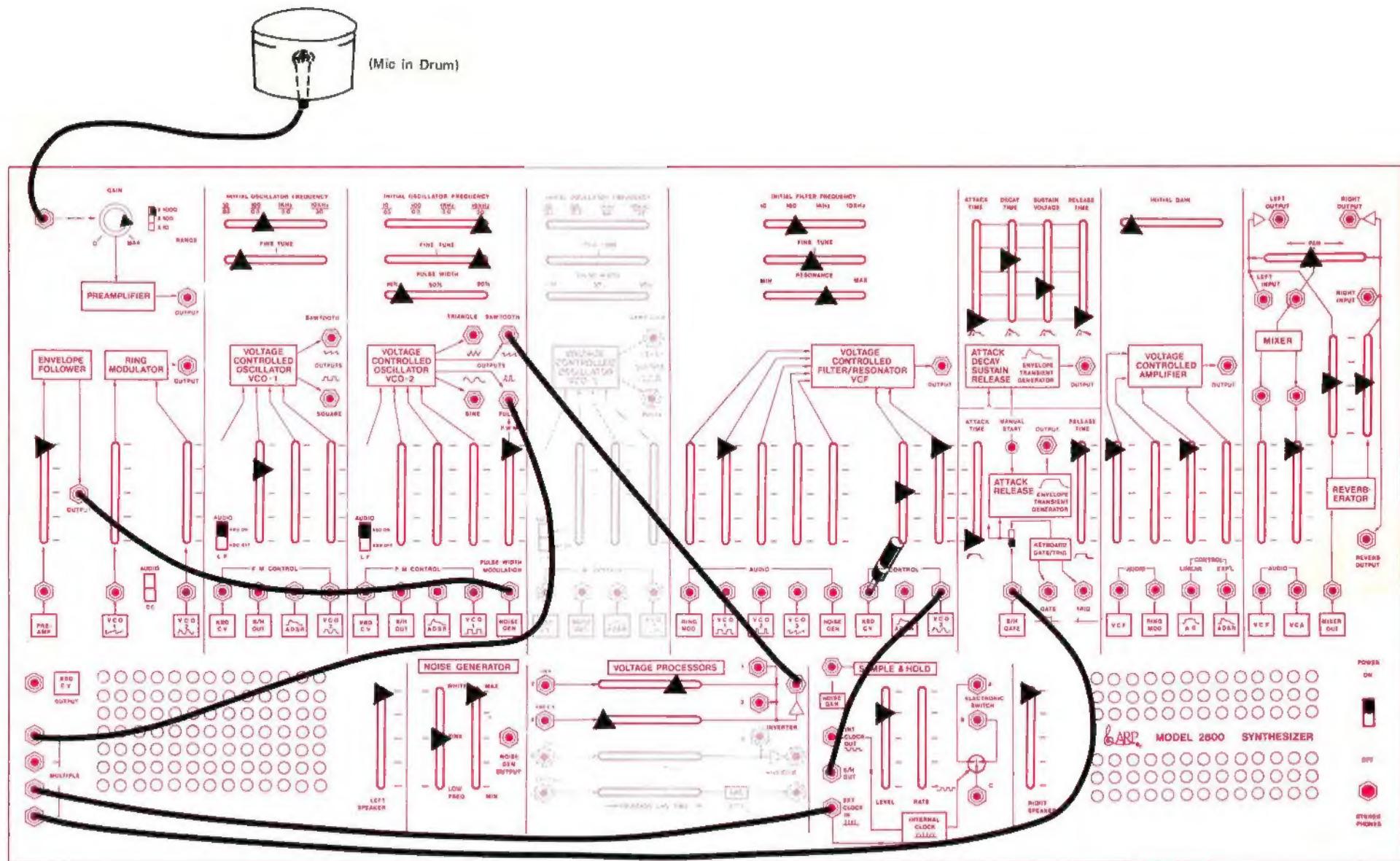
Modulated External Source

97.



"Ow" on External Source

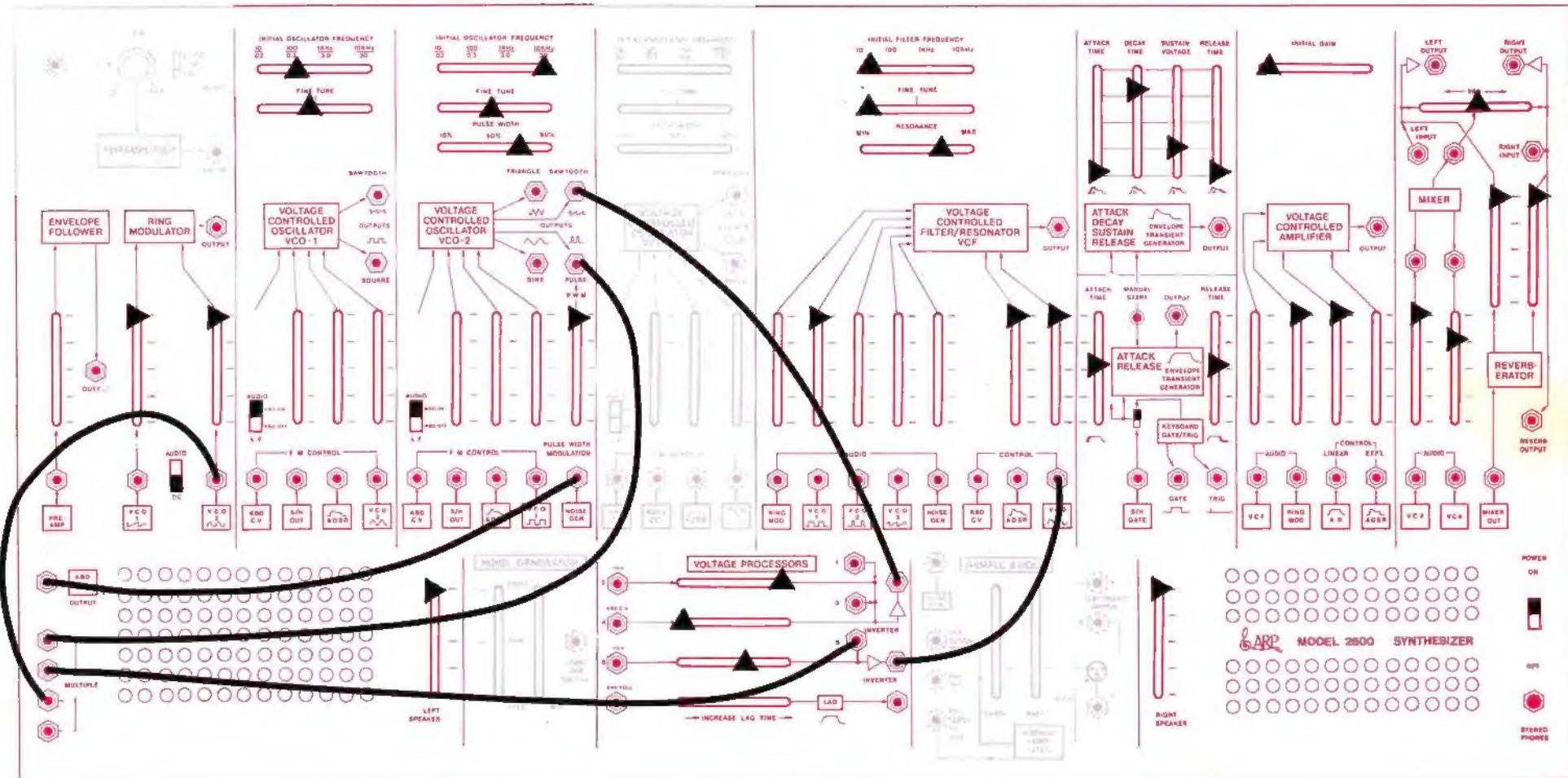
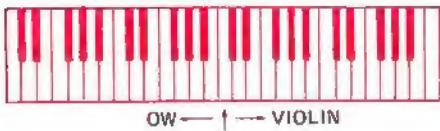
98.



Drum-controlled ADSR and S/H

99.

VCO TUNING



Split Keyboard Adjustments:

1. Adjust VCO 2 Pulse Width while playing Keys C3 and Csharp3 alternately. You are fine tuning the placement of the split so that a violin will be heard on Csharp 3 and an 'Ow' will be heard on C3.
2. Adjust the +10V inverter slider for desired filtering on 'Ow'.

6 PATCHCORDS

Split Keyboard: Bass “Ow” and Violin

100.